The Veterinary Record

FOUNDED BY WILLIAM HUNTING, F.R.C.V.S., 1888.

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National Veterinary Medical Association of Great Britain and Ireland.

FIFTIETH ANNUAL MEETING, FOLKESTONE, 1932.

Presidential Address

BY

Lieut.-Col. P. J. SIMPSON, D.S.O., T.D., J.P., F.R.C.V.S.

It falls to my lot to address the members of the N.V.M.A. for the second year in succession.

I am very sensible of the great honour conferred upon me when last year you re-elected me to serve as your President during this our Jubilee Congress.

Last year I am afraid that I inflicted on those present at Norwich a rather long dissertation on the fifty years of progress of the Association, as we were then celebrating its fiftieth birthday although this week we are celebrating the fiftieth annual general meeting. Without in any way disparaging the historic interest of this occasion it is not my intention to review the 49 congresses that have been held, although there is among the records of those congresses much food for thought and reflection. We must all, however, feel that we cannot let this occasion pass without expressing our joy that the Association has survived its many trials and tribulations, and to-day I think we may with every confidence state that it was never so firmly established and was never in a more satisfactory condition numerically and financially. (Hear, hear.) By that I do not mean that it is in an ideal state or a state that is entirely satisfactory to all the members of the profession—that position it will never attain.

As I have said, I do not want to go into ancient history, but I think it should be known that the idea of holding an annual meeting of congress of veterinary surgeons arose in the year 1867. In January of that year Mr. G. Bodington, the then President of the West of England Veterinary Medical Association, issued a circular letter which was published in *The Veterinarian*, urging the local veterinary medical associations to help in the organisation of a congress of the whole of the veterinary profession. The objects and advantages of such a congress and subjects for discussion were laid down in that appeal. After a preliminary meeting at Birmingham the first veterinary congress was held at the Freemasons' Tavern, London, on May 7th, 1867, and, from the account contained in *The Veterinarian*, must have been a success.

Mr. Bodington, the organiser, was evidently a very sincere worker in the cause of the congress and progress of veterinary science, as in one of the many appeals he makes the following quotation, which I think worthy of repetition as it is still true to-day:—

" Our needful knowledge, like our needful food,
Unhedg'd, lies open in life's common field
And bids all welcome to the vital feast."

It is worthy of note that this congress was the work of the country practitioners and not until it was held in London did the Metropolitan practitioners and members of the teaching schools evince interest in the movement.

Let us now look ahead and see what prospects the future holds for the veterinary profession.

With the prevalent financial world depression the expansion of the profession in the immediate future must of necessity be restricted, but that increased work of very vital national importance is before it I am confident.

The profession can rightly claim that it has rid this country of many animal plagues that were causing large losses to the nation and that it will do so again if given the means. There are, among us to-day, diseases crying out for further investigation, and which in an insidious way are the cause of very great losses to agriculture and indirectly to the nation—mastitis, abortion and Johne's disease are some that I have in mind. The still mysterious disease in

DEPT. OF VET. MEDICINE

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cattle, known by various terms, that shows itself as a form of hysteria, is another.

The veterinary profession, taken generally, is distinctly behind-hand in its knowledge of the diseases of poultry and fur-bearing animals such as rabbits and foxes. The industry of breeding rabbits and foxes for commercial purposes is very markedly on the increase and the general practitioner must of necessity soon find himself being consulted on the ailments of these animals and expected to be *au fait* with them.

The veterinary surgeon has undoubtedly to have a far greater and wider knowledge of the arts of Medicine and Surgery than his brother in the medical profession; even in the comparatively narrow scope of the practice of the latter it has been found necessary to specialise, and I am convinced that specialisation will not only be more extensively practised in our profession than it is to-day, but that the teaching and examination of the student of the future will have to be modified to meet these requirements.

In other words, all students will be taught in common up to a point and from that point they will then branch away to take up the line of a special form of science.

The new five years' course is heading that way. As an instance, the subjects of Chemistry, Botany and Zoology can now be passed prior to entering a veterinary college, and I am prepared to go further and allow the would-be student to pass an approved examination in such subjects as Animal Husbandry and Genetics, before entering a veterinary college, thus enabling him to devote more time to veterinary science *per se*.

When a student has passed satisfactorily in Comparative Anatomy, Physiology, Pathology, Materia Medica and Toxicology, etc., he should then be given the option of electing to pursue a curriculum that would respectively best fit him for (*a*) general practice; (*b*) laboratory and research work; (*c*) public health work.

The man who sat for section B final examination would of course be expected to have a much greater knowledge of Pathology and Bacteriology, Toxicology and laboratory methods than the man sitting for section A, from whom much more would be required in the subjects of Medicine and Surgery, Materia Medica and those matters on which he would be daily consulted.

We have been told time and again by those who have the power to place members of the veterinary profession into positions which they by their training should fill, that they are most anxious to see this come about, but each and all emphasise the fact that the profession must prove to them that the Royal College of Veterinary Surgeons only admits as its members persons who have passed educational and scientific examinations of such a standard that they can be relied upon adequately to fill such posts. We have made progress in this direction, I believe, but that that progress is far too slow in comparison with other professions is only too evident. With the advancement of veterinary education there will be or should be a corresponding rise in salaries attached to such appointments.

Quite recently, on the score of economy, some Colonial Veterinary Services have been deprived of their autonomy, and have been placed under the Medical or Agricultural Services. One has a suspicion that economy was not really at the bottom of this move; no valid argument that better service will be obtained has been put forward, or complaint of inefficiency made.

From the profession's point of view quite the reverse will be the case, as unless there is the prospect for a man to become head of his department of service, the right type of man, or the type of man to be encouraged to join these services, will be found to be not available. For the Government to obtain suitable candidates for their services it must be made abundantly clear that they must make the posts "worth while."

Close co-operation between Medical, Agricultural and Veterinary Services in matters affecting public health, etc., is a vital necessity, but much as we admire the former we have never admitted, nor do we intend to admit, that their knowledge of veterinary science is sufficient to justify their becoming its masters. Each has its own sphere of action and should not be subservient to the other. Plenty of veterinary surgeons have proved that they have the power of administration as well as scientific knowledge. (Applause.)

The Work of the "National"

Turning to our own domestic affairs of the "National," I am proud to think that much has been accomplished during my period of office by the hard work of the various committees of the Association.

The "turn out" of the *Veterinary Record* and its general usefulness as the country practitioners' journal has, I think, greatly improved, and that hard working—the hardest worked—committee, the Editorial Committee. together with the Editorial Representative are to be congratulated on the many improvements they have affected and, I feel confident, will continue to make in the future. (Applause.)

Perhaps another committee whose work has grown out of all knowledge is the Organising Committee.

The outstanding work that it has done has been in formulating a scheme of free treatment of sick animals of the poor by members of the

Royal College of Veterinary Surgeons in conjunction with the Royal Society for the Prevention of Cruelty to Animals.

All veterinary surgeons have at all times been willing to treat free the animals of those unable to pay a fee, but owing to the bye-laws governing the members of the R.C.V.S. they are prevented from advertising this fact. It was found necessary, therefore, to combine with a Society which would be able to bring before the public this fact and which would, by so doing, not only assure the person unable to pay a veterinary surgeon a fee, of proper scientific treatment for his pet, but it would very largely save that person's pet from being subjected to torture and pain inflicted by the crass ignorance of persons holding themselves out as " Specialists, Qualified to treat, etc," and running establishments with high-sounding and misleading names such as "Animal Sanatorium," "Animal Dispensary," "Animal Hospital," etc, in which a large array of bottles, instruments, etc., and the staff robed in snow-white gowns is all sufficient to gull even the educated into the belief that they are qualified veterinary surgeons. In fact, so plausible are some of these persons and places that the Press have been sufficiently hoodwinked as to describe the staff as veterinary surgeons, which statement, of course, the persons concerned have never taken the trouble to deny. In some cases medical men and clergymen are so taken in as to bestow their blessings on these institutions. The " National," through its Organising Committee, has been extremely active of late in drawing the attention of the Press and public generally to the provision in the Veterinary Surgeons' Act whereby any person wrongfully using the title " Veterinary Surgeon " or holding himself out to be a veterinary surgeon lays himself or herself open to prosecution.

It is not my intention to go into the details of the schemes which our good friends the R.S.P.C.A. and ourselves are now working, but it is gratifying to note that all branches of the R.S.P.C.A. and the " National " are busy at work formulating and perfecting these schemes with, we hope, the result that, as in human medicine, the " Dog in the Street " will have the same facilities for scientific and rational treatment as his cousin who reclines on silken cushions in a Rolls car, and will, what is more, not be subjected to needless pain and suffering through the application of unskilled and ignorant treatment, cases of which all here could readily quote.

Congratulations, therefore, to the chairman and members of this committee on this piece of work which they have accomplished. (Applause.)

The committee dealing with the scheme for the eradication of bovine tuberculosis is still in existence and is likely so to remain, because it is a matter that can never be allowed to drop. At the present moment the putting into force of the scheme drawn up by the " National " is held up on the score of economy, although the scheme itself has been favourably received by many authorities on the subject. Applications for over 500 copies of the scheme have been received and this number has been distributed *gratis* by the N.V.M.A.

Close and intimate relations exist between ourselves and the Royal College of Veterinary Surgeons, and the handing over by the latter to the " National " of matters that, although referred to the College, do not come strictly within their jurisdiction, enables the Council of our parent body to devote more time and energy to matters with which they and they alone can deal.

Much time and thought have been devoted to suggested alterations in our Articles of Association, and you will be asked to express your opinion on these to-day.

It is pleasing to note that the work of the office staff increases from year to year and this is largely accounted for by the fact that our Association is now recognised as the body to which not only the Government and its Departments, and Local Authorities may refer, but medical men both collectively and individually are in close communication with us in matters affecting the sister professions.

Even individual laymen and women have found that the " National " is a representative body with which they can consult on matters affecting the profession, apart, of course, from those relating to professional education and conduct, which are immediately referred to the Royal College of Veterinary Surgeons as being the only body having power to give ruling on these subjects.

There is much work for both the N.V.M.A. and the R.C.V.S. to perform without either body in any way usurping the rights and privileges of the other, but as a note of warning, I would ask Divisions and Branches of the " National " to consider and appreciate the sphere of action of the " National " before, in their enthusiasm, they forward to the Council of the N.V.M.A. resolutions which, if acted on, would rightly cause the Royal College to protest that we were acting beyond our powers.

I presume that outside our own politics we are a non-political association and therefore the trend of politics does not greatly interest us, and it would be unwise on the part of a President to express any view on the subject; at the same time one cannot help viewing with a certain amount of uneasiness the trend of modern politics in certain directions.

We have not yet attained the honour of having a veterinary surgeon sitting in the House of Commons to watch the interests of

the profession and to bring to the notice of the Government our needs, etc., but I for one hope that one day this will be an accomplished fact and not an idle dream. Nevertheless, we have "friends at court" who have been extremely helpful in many ways and to them we offer our thanks. (Hear, hear.)

The coming into force of the New Charter and the Irish Free State Bill in one year is a thing for which we as a profession are extremely grateful and our thanks are due to those members of the Council of the Royal College who have worked so hard on our behalf and brought these matters to such an amicable solution. I can only express the hope that in years to come the agreements reached will be found to work as smoothly as they have started.

In connection with Parliamentary work we (as I am sure also the medical profession) eagerly await legislation with regard to the preparing and sale of biological products and other therapeutic substances; in other words, that these substances should by law be standardised and their exact composition, etc., be plainly stated, and that the use and sale of them should be restricted to professional men.

The veterinary profession is so closely allied financially to agriculture that the depression in the latter has, during the past year, reacted considerably on the country practitioner. By that I do not mean that his services are called upon less frequently but that compensation for those services is not so readily forthcoming.

For the same financial reason a heavy brake has been placed upon the work of veterinary research, and if there has appeared to be a restricted amount of output from our excellently run Veterinary Research Institution, it must not be attributed to lack of energy or knowledge on the part of the staff, but to lack of financial assistance.

Whilst on the subject of institutions, one cannot allow this opportunity to pass without expressing our admiration for the heroic efforts of Professor Hobday in saving the crumbling remains of the Royal Veterinary College at Camden Town. (Applause.) Work on the rebuilding has already started, but this does not mean that all the necessary money required has been obtained to place this teaching institution on even an equality with the majority of Continental veterinary colleges.

We British veterinary surgeons wish to see that England, the home and market of the best breeding stock in the world, shall have an institution dealing with the teaching of veterinary science that shall be acclaimed the best in the world, and I appeal for all present to make yet another effort to help in securing that end. (Hear, hear.)

In concluding this address, which I feel is very inadequate for the occasion, I desire most sincerely to thank the chairmen of committees, the committees themselves and the Council, members and staff of the National Veterinary Medical Association for the very loyal support and unstinted help they have accorded me during my period of office, and I can only hope that my successor will have as pleasant a time in the chair as it has been my fortune to enjoy.

There are limitations set upon all of us and beyond these it is impossible for us to go.

My period of office has not been to me as satisfactory as I could wish, but I honestly feel, in bidding "Good-bye" as your President, that I have tried to do, as far as lay in my power, my best for the "National." I do realise, however, that that falls short of what a President might have done and therefore crave your pardon for all my many failings that must be apparent to you. (Loud applause.)

The Veterinary Record

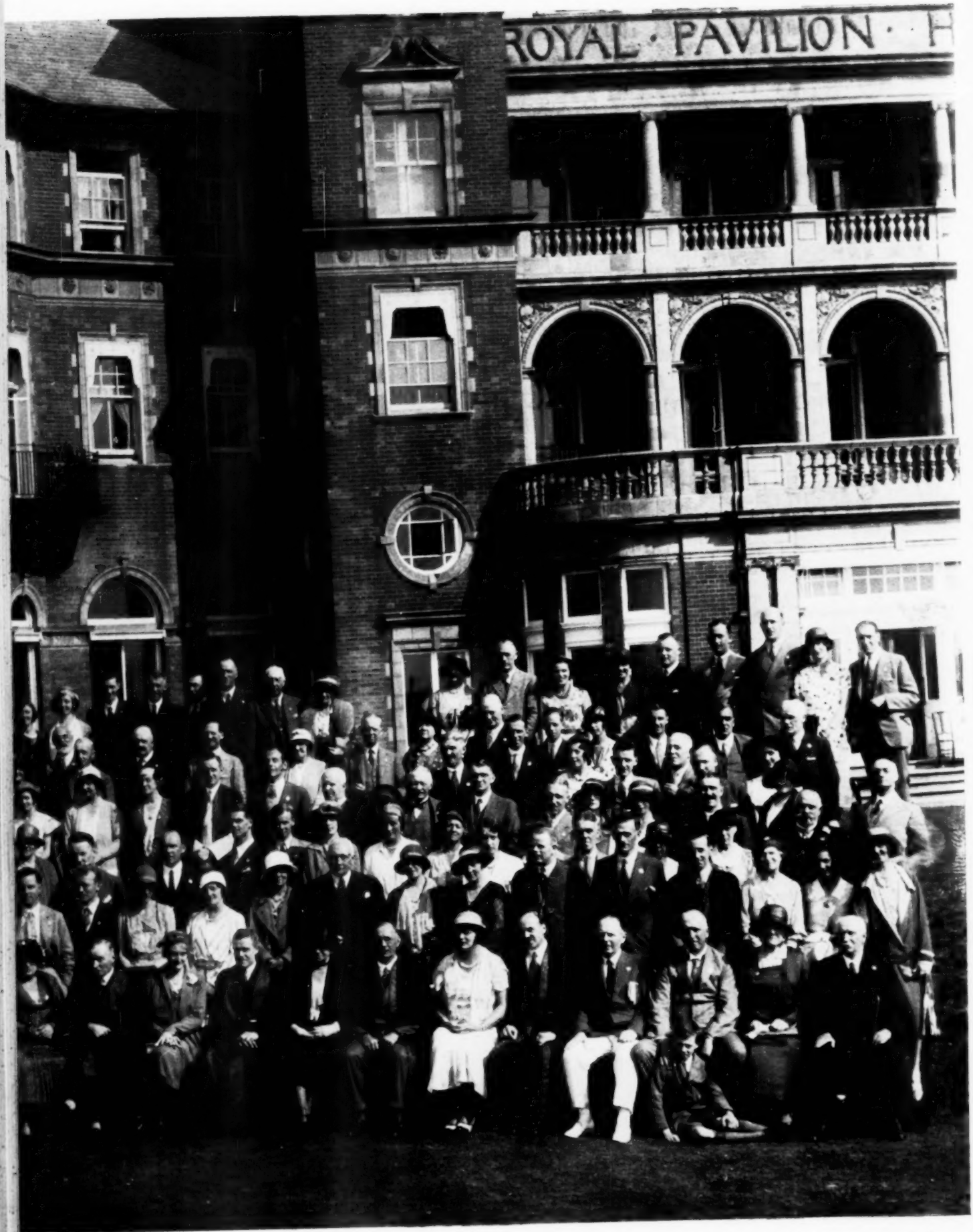
September 3rd, 1932.

THE JUBILEE CONGRESS

ON Monday, August 8th, 1932, the Fiftieth Annual Congress of the National Veterinary Medical Association of Great Britain and Ireland opened at Folkestone under the presidency of Lieut.-Colonel P. J. Simpson, when there was a large attendance of delegates (including representatives from Government Departments and Local Authorities) from all parts of Great Britain and Ireland.

The proceedings were held in the Town Hall, and continued until the following Saturday, August 13th, the items in an exceptionally interesting programme of ceremonial, scientific and social events being skilfully interwoven to provide a representative quota for each day. Arrangements were in the hands of an enthusiastic Provisional Committee, with Mr. H. P. Hogben as Chairman, and with an indefatigable and supremely competent Local Secretary in Major T. Dalling, of Beckenham.

Delegates, lady visitors, and friends were unanimous in their appreciation of the excellence of the measures which had been taken for their instruction and enjoyment, and loud in their praise of the attractions of a charming pleasure resort, which a week of brilliant sunshine enabled all to enjoy to the full. At the conclusion of the convention opinion was unanimous that 1932 had witnessed the ideal Congress, and one well worthy of jubilee status.



n, Jubilee Congress, Folkestone, 1932.

[Photo by Halksworth Wheeler, F.R.P.S., Folkestone.

National Veterinary Medical Assoc

CONGRESS ATTENDANCE LIST

We give below the list of delegates, members and visitors who attended the Annual Congress of the Association, Folkestone, 1932. Every effort has been made to render the list complete, but inasmuch as it would appear that many of those who took part omitted to sign the Attendance Book, there are inevitably many omissions.

Members

Lieut.-Colonel P. J. Simpson (President), Dr. W. H. Andrews, Captain E. F. Angler, Captain J. R. Barker, Messrs. E. P. Barrett, N. S. Barron, H. Bell, W. P. Blount and E. C. Bovett, Major H. H. Brassey-Edwards, Mr. W. H. Brooke, Professor T. G. Browne, Mr. W. A. Burns, Captain F. G. Buxton, Professor J. B. Buxton, Mr. A. J. Cattell, Major F. Chambers, Mr. J. Wright Conchie, Professor J. F. Craig, Messrs. M. Crawford, F. Crowhurst, F. A. Davidson and D. E. Davies, Major W. Denington, Messrs. J. C. DeVille, J. B. Dier and P. F. Dolan, Dr. J. T. Edwards, Mr. S. J. Edwards, Captain W. G. Evans, Captain C. P. Fisher, Mr. A. B. Forsyth, Captain F. C. Gillard, Messrs. R. E. Glover, C. R. Golledge and S. V. Golledge, Major F. Leeds Gooch, Messrs. H. Gooch, W. S. Gordon, S. Gourley, L. B. A. Grace and W. Gray, Lieut.-Colonel H. Greenfield, Dr. J. Russell Greig, Captain O. V. Gunning, Major T. G. Heatley, Mr. C. G. Hill, Professor F. T. G. Hobday, Major T. H. Hobson, Messrs. H. P. Hogben, T. F. Hogben, C. W. Howard, P. J. Howard and R. Hudson, Captain H. Tudor Hughes, Messrs. H. V. Hughes and W. J. Ironside, Captain W. K. Johnstone, Messrs. A. J. Kennedy and H. King, Major H. Kirk, Lieut.-Colonel G. P. Knott, Captain E. J. Lainé, Captain W. W. Lang, Messrs. G. H. Locke, R. Lovell and J. Macfarlane, Major J. G. McGregor, Major W. A. Macgregor, Professor J. Macqueen, Messrs. F. H. Manley and G. P. Male, Major E. S. Martin, Messrs. J. Martin and D. W. Menzies, Dr. F. C. Minett, Professor W. M. Mitchell, Dr. R. F. Montgomerie, Sir John Moore, Messrs. A. L. Mullen, R. Barons Nelder and A. B. Orr, Major R. H. H. Over, Messrs. L. E. Perkins, W. A. Pool and J. W. Pritchard, Lieut.-Colonel Graham Rees-Mogg, Captain J. R. Rider, Captain J. W. Rider, Mr. C. Roberts, Professor Share-Jones, Dr. A. L. Sheather, Messrs. A. Spicer and A. W. Stableforth, Major G. F. Steevenson, Captain W. Lyle Stewart, Colonel R. J. Stordy, Mr. R. Swaby, Major F. J. Taylor, Mr. H. Taylor, Major J. H. Taylor, Mr. Alex Thomson, Captain W. K. Townson, Messrs. F. T. Trewin, A. E. Ward and E. G. White, Professor A. W. Whitehouse, Messrs. T. Wilkinson, F. W. Willett and J. D. Williams, Professor G. H. Wooldridge, Dr. W. R. Wooldridge, Professor J. G. Wright, Major W. N. Wright, and Mr. W. Jackson Young, together with Mr. J. W. McIntosh (Hon. Secretary), Major T. Dalling (Local Secretary), Mr. F. Knight (General Secretary), and Mr. W. Brown (Editorial Representative).

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Delegates

Commonwealth of Australia, Captain R. H. Heywood; American Veterinary Medical Association, Dr. R. W. Tuck; Veterinary Union of Belgium, Dr. L. Tobback; Ministry of Health, Sir Weldon Dalrymple-Champneys, Bart., M.D., M.R.C.P.; Ministry of Agriculture and Fisheries, Mr. J. L. Frood; Ministry of Agriculture, Northern Ireland, Mr. H. G. Lamont; Department of Agriculture, Irish Free State, Mr. P. A. Rogan.

County Councils.—Aberdeen, Captain G. Howie; Ayr, Mr. D. S. Barbour and Captain Q. A. Stewart; Bucks., Major H. G. Lepper; Cornwall, Captain S. J. Motton; Cumberland, Captain R. Simpson; Dumbarton, Mr. J. McDougall; Durham, Mr. E. R. Callender; Kent, Mr. J. Egerton Quested and Mr. A. Greenwood; Lanarkshire, Mr. Hugh Begg and Mr. James Russell; Middlesex, Mr. W. A. Hancock; Midlothian, Mr. J. N. Ritchie; Nottingham, Captain H. L. Torrance; Pembrokeshire, Captain A. J. S. Reynolds; Surrey, Captain F. W. Medlock; Yorkshire, West Riding: Major D. S. Rabagliati.

City and Town Councils.—Aberdeen, Captain J. McAllan; Birkenhead, Mr. H. Burrow; Birmingham, Mr. C. G. Allen; Bradford, Major W. Halstead; Edinburgh, Councillor George D. Brown and Mr. A. Gofton; Glasgow, Bailie James Strain, Bailie Wm. K. McCandlish, Messrs. A. M. Trotter, D. R. Campbell and J. Hamilton; Huddersfield, Captain W. R. McKinna; Hull, Mr. H. P. Lewis; Leeds, Lieut.-Colonel J. A. Dixon; Manchester, Alderman J. Hinchliffe, Messrs. R. C. Locke and A. Chadwick; Newcastle-upon-Tyne, Mr. T. Parker; Preston, Major R. Finch; Sheffield, Mr. W. Tweed; West Ham, Mr. H. E. Bywater; Wigan, Mr. W. Woods.

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Visitors

Alderman J. W. Stainer (Mayor of Folkestone), Messrs. E. W. Ascoli and J. R. Bond, Major W. E. Barry, Messrs. Ll. E. W. Bevan, H. J. Ede, H. V. M. Metivier, P. W. Southern, Captain J. F. L. Taylor, and Professor Wilson.

Lady Visitors.—Mrs. P. J. Simpson, Mrs. J. W. Stainer (Mayoress of Folkestone), Mrs. Alwyn, Mrs. Barbour, Mrs. and Miss Begg, Mrs. Bovett, Mrs. and Miss Brook, Mrs. W. Brown, Mrs. Buxton, Mrs. Bywater, Mrs. Callender, Mrs. Conchie, Mrs. Craig, Lady Dalrymple-Champneys, Mrs. and Miss Dixon, Mrs. Dolan, Mrs. Evans, Mrs. Frood, Mrs. C. R. and Mrs.

S. V. Golledge, Mrs. Greig, Mrs. Hancock, Mrs. Hill, Mrs. Hobson, Mrs. H. P. Hogben, Mrs. Howard, Mrs. Hudson, Mrs. Kennedy, Mrs. King, Miss King, Mrs. Locke, Mrs. McDougall, Mrs. McGregor, Miss McIntosh, Mrs. Male, Mrs. Minett, Lady Moore, Mrs. Perkins, Mrs. Reynolds, Mrs. J. R. and Mrs. J. W. Rider, Mrs. Roberts, Mrs. Russell, Miss Sheather, Mrs. R. Simpson, Mrs. Stableforth, Mrs. Stewart, Mrs. Taylor, Mrs. Trewin, Mrs. Ward, Mrs. Whitehouse, Mrs. Wilkinson, Mrs. Willett, Mrs. Woods, Mrs. Wooldridge, Mrs. Wright, and Mrs. Young.

Total Attendance Recorded—236.

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Apologies for Absence

Messages of apology for absence were received from:—

Lieut.-Colonel H. G. Bowes, Dr. O. Charnock Bradley, Lieut.-Colonel J. W. Brittlebank, Captain J. C. Coleman, Mr. H. W. Dawes, Major Brennan DeVine, Major A. C. Duncan, Mr. Edward R. Edwards, Mr. H. S. Elphick, Mr. H. Hicks, Mr. L. Hughes, Mr. Richard Hughes, Mr. T. Eaton Jones, Mr. H. C. I. Kelly, Captain J. F. Macdonald, Mr. James Macfarlane (Glasgow), Mr. J. McQuaker, Mr. W. Nairn, Mr. Walter Perryman, Captain A. W. Noel Pillers, Major A. Spreull, Mr. H. P. Standley, junr., Mr. S. Villar, Colonel G. K. Walker, Captain W. G. Wragg (Hon. Treasurer) and Lieut.-Colonel T. Dunlop Young.

BOVINE TUBERCULOSIS ERADICATION IN U.S.A.

In recognition of its success in eradicating bovine tuberculosis, North Dakota was designated on July 1st by the United States department of agriculture as a modified accredited area. This term signifies the reduction of the disease to within one-half of one per cent., of the cattle population by official tuberculin testing.

North Dakota is the eighth State in the Union and the second west of the Mississippi river to receive that distinction. States that previously attained are North Carolina, Maine, Michigan, Indiana, Wisconsin, Ohio and Idaho.

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A booklet entitled "Ridding the Nation of Tuberculosis in Live Stock," by H. R. Smith, Live Stock Commissioner of the National Live Stock Exchange, Chicago, Ill., outlines the progress made to date, and contains charts showing the status of various parts of the United States as regards eradication.

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The United States imported 207 metric tons of horsehair during the first nine months of 1931 from Russia. The short hair from manes and tails, after being put through a special process, resulting in that which is commonly known as "curled hair" is used for furniture upholstery and cushions of all kinds, especially in automobiles and railroad coaches, according to the *Economic Review of the Soviet Union*. The long tail hair is used chiefly for brushes and in cloth. It is carefully sorted, washed and disinfected before being exported to this country.

OPENING CEREMONY

Address of Welcome by the Mayor of Folkestone

At the opening ceremony at the Town Hall on the morning of Monday, August 8th, 1932, the President. Lieut.-Colonel P. J. Simpson, D.S.O., T.D., J.P., F.R.C.V.S., took the chair.

Among those supporting him on the platform were: The Mayor of Folkestone (Alderman J. W. Stainer), Professor J. B. Buxton (President, Royal College of Veterinary Surgeons), Major J. G. MacGregor, Major F. L. Gooch and Professor J. F. Craig (Vice-Presidents), Mr. J. W. McIntosh (Hon. Secretary), Professor G. H. Wooldridge, and Mr. H. P. Hogben (Chairman of the Provisional Committee).

The President said it was his very pleasing duty to introduce to them the gentleman who had so kindly come forward to open that—their 50th—Congress. (Applause.) The speaker referred to Alderman J. W. Stainer. That Congress had been distinctly fortunate. They were opening under ideal conditions as regards weather. They all knew that old saw, "Happy the bride that the sun shines on," and should he say "Happy the Congress that the sun shines on." ? He hoped and trusted that that Congress would be a happy one, and one from which members would go back having profited by the papers and discussions that were to ensue.

The Congress was very fortunate in coming to such a charming spot in the Garden of England—Kent—as Folkestone was. (Applause.) They had already had great evidence of receiving a hearty welcome in the town, and he was sure evidence of that would be carried on through the week they were in Congress. They were also fortunate, too, if he might say so, in that the numbers that were attending that Congress at some time or other during the week would be approximating to a record. He thought they would be able to say approximately in the neighbourhood of from 250 to 260 people would have attended that Congress, which he deemed to be very satisfactory indeed. (Applause.)

Last, but not least of their fortunate circumstances was having with them that day his Worship the Mayor of Folkestone to open their proceedings. (Applause.) From what little time the speaker had had to gather information about his Worship, he found that he was an extremely active man in his civil life. The speaker believed he was right in saying the Mayor was not a man of Kent, but that he came from Yorkshire.

[The Mayor here interposed to say that he was born in Folkestone.]

Proceeding, the President said he was misinformed, and was sorry for his mistake. But wherever the Mayor was born, the speaker was

sure he was a credit to the place he was born in. In his civic capacity, the speaker was given to understand, the Mayor devoted a considerable amount of time to public health and education—and in fact it was more particularly, he believed, to education that he gave so much of his energies. He was, for one thing, Chairman of the Harvey Grammar School, and Vice-Chairman of the Education Committee in that locality. The speaker knew he took up science, should he say, as a hobby; at any rate, from the short conversation he had had with him, he had discovered he had considerable knowledge of such things as bacteriology, pathology and other sciences, so they were fortunate in having a scientific man. The speaker did not think he need detain them any longer, but he had pleasure in calling upon his Worship the Mayor of Folkestone to open their Congress. (Applause.)

ALDERMAN STAINER'S ADDRESS

In formally opening the Congress, the Mayor said he did not quite know whence their President got his idea that he was a Yorkshireman --but he was in the vicinity of being accurate, for his father was a Yorkshireman and his mother was a Yorkshire woman, but as a matter of fact, his place of birth was not very far from that building, in which they were seated.

The President had been rather eulogistic of him in a kind of anticipatory capacity. He had summed the speaker up at a somewhat early time, and it made him tremble whether he might not disappoint him and disillusion him from the glorious qualities that he attributed to him, but at all events he felt very much at home amongst veterinary surgeons. (Hear, hear.)

Continuing, His Worship said:

I find myself by nature of my office as Mayor of the Borough of Folkestone in what is to me an extraordinarily interesting position this morning. It affords me great pleasure to have the honour of addressing this Conference and extending a civic welcome to its delegates. (Applause.)

It is most appropriate, in the first place, to say that we all, Council and Burgesses alike, hope that you will enjoy your brief residence in our town, that during the leisure you allow yourselves from the serious side of your scientific and professional work, you will find a cordial welcome from all sections of society, and that your comfort and pleasure will exceed your best expectations.

Many of you will doubtless know this neighbourhood and some may be here for the first time. To all I would say, as a native born and bred, that the more familiar you become with the views and prospects this place affords, the more you love them. The infinite and ever-changing beauties of nature are revealed in such abundance that none but a barren soul can fail to see, and no description, however poetic, can adequately express.

I hope, too, that your Conference experience on the social side will be a memorable one. You will be renewing old and making new professional friendships and discussing common interests, while you enjoy leisure from the routine concerns of your calling. This will afford you opportunity for an outlook on affairs from a new angle, which should increase the joy of life, and enable you to see more clearly the intrinsic use of your profession in the service and well-being of mankind. In fact, I hope that it will give you an enhanced conceit of yourselves as an integer in human society and progress.

This idea, I am delighted to find, is supported by your excellent programmes. As Mayor of a health resort—and I should imagine in rural districts it would strike one with even greater force—it comes home to me that civic life, and indeed all life, human as well as animal, owes an inestimable debt to veterinary science. (Hear, hear.) I presume that the world should be governed by common sense based upon common knowledge. The more the people can know, appreciate and respect the expert service rendered by your profession the sooner will come about vast and overdue reforms in eliminating disease in man and animal, in effecting national economies and enhancing the value of our food supplies. We who serve on public bodies know more than many of those who do not, of the points of contact between public health and veterinary science and in some of us indeed the knowledge might well be quickened. I am sure it would be a good thing, not only for Public Authorities, but also for you, to effect a better realisation in the people at large of the dignity, the precision, and high aims of your noble calling.

I welcome you, therefore, in our midst, and hope that the quality and the scope of your Conference will add prestige to your profession and establish it more firmly in public favour. (Loud applause.)

WELCOME TO DELEGATES

The President said that, before thanking the Mayor for the most excellent opening address he had given them, he would interpose two things regarding the Congress. He would like to extend a hearty welcome to the large number of delegates which had been sent to attend that Congress. There was a total of 48 delegates, specifically representing local authorities, attending that Congress, and amongst those delegates were delegates from the United States Department of Agriculture, the Veterinary Union of Belgium, and the Commonwealth of Australia. They had also delegates from their

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own Government Departments, such as the Colonial Office, and the Ministry of Health. He was extremely glad to know they had for the first time a delegate from the Ministry of Health attending, which he hoped would show closer contact between the veterinary profession and the medical profession. (Applause.) There were also delegates from the Ministry of Agriculture and Fisheries, the Ministry of Agriculture of Northern Ireland and the Department of Agriculture of the Irish Free State. He would not go through the long list of delegates from county councils, city councils and town councils, but in the name of the National Veterinary Medical Association, he gave them a very hearty welcome.

MESSAGE FROM THE GERMAN VETERINARY COUNCIL

A message of good-will had been sent to that Congress because they were unable to send a delegate, from the German Veterinary Council, and the President proceeded to read a translation of the parchment scroll which they had sent, as follows:—

The German Veterinary Council
(Deutscher Veterinärrat)

as representing the German Veterinarians presents greetings and congratulations to the Fiftieth Annual Congress of the National Veterinary Medical Association of Great Britain and Ireland.

The German veterinarians, highly interested in the development of Veterinary Medicine in Great Britain and Ireland, have appreciated every progress benefiting our common science and the social position of our profession in England, Scotland and Ireland.

Regarding veterinary work as being of the greatest value to the public welfare of every country, the German veterinarians wish that, on the occasion of your anniversary, the efforts of the National Veterinary Medical Association may be acknowledged by the whole population of your country, realizing that Veterinary Medicine is an essential factor in the eradication and control of diseases and epidemics in livestock, that the activities of veterinarians in treating diseased animals prevent economic losses and that the co-operation of veterinarians in public health affairs and food hygiene grants reliable protection against diseases of the public.

Berlin, *August 8th*, 1932.

For the German Veterinarians,
Valentin Stang,
President of the German Veterinary Council
(Deutscher Veterinärrat)

The President then thanked the Mayor for his address and for so kindly giving so much of his very valuable time to come amongst them. He was glad to say that was not the Mayor's last appearance amongst them. (Applause.) They were looking forward to seeing him at their social functions and, in fact, they would be pleased to see him wherever and whenever he liked to come amongst them.

On behalf of the Association, he thanked the Mayor very much indeed, and if he might make one slight reference to his family, he would express the hope that the Mayor might live longer than his father did, who, he believed, reached the age of 90. (Applause.)

The Mayor said he was very sorry indeed to have to correct their President again. (Laughter.) His father did not live to be 90—he died at the early age of 85—(laughter)—but his mother lived to be within a few days of 93, and died this year.

He thanked the Congress for the very kind way in which they had received him.

There was an item which he thought he ought to have mentioned, and which occurred to him while their President was speaking, and that was that they had come to a town which received honour from all departments of scientific thinking, in the fact that it was the birthplace of William Harvey. (Applause.) He expected some of the delegates had already seen the statue on the Leas; but perhaps it would be not inappropriate to bear in mind while veterinarians were in Folkestone that William Harvey's experiments were largely conducted on the lower animals, and that his demonstration on the stag was one of his outstanding experiments. While he was at Merton College, Oxford, in residence when the Royalist Army was besieged in that town, he occupied Merton College, and conducted experiments with hens; so that the speaker thought from that point of view Folkestone had a real claim on the thought and grateful memories of veterinary surgeons. (Applause.)

Experiments conducted at Cambridge have shown that beef may be preserved for ten weeks by chilling if a certain amount of carbon dioxide is in the air of the storeroom. If this discovery can be adapted commercially, it should be possible for chilled beef to be brought over from Australia just as it is now brought from the Argentine. At present Australian beef can only be imported in a frozen condition. The position at present is not very promising, however, as Sir William Hardy, Director of Food Investigation, Department of Scientific and Industrial Research, is of the opinion that the difficulties that will have to be overcome before the results obtained in the laboratory can be repeated in the ship's hold are so great that they may never be overcome.

MEETING OF COUNCIL

A meeting of the Council of the Association was held in the Town Hall, Folkestone, on Wednesday, August 10th, 1932, immediately preceding the Annual General Meeting.

The President of the Association (Lieut.-Colonel P. J. Simpson) occupied the chair, and there were also present: Mr. H. Bell, Professor J. B. Buxton, Professor J. F. Craig, Major T. Dalling, Mr. F. A. Davidson, Major G. W. Dunkin, Major F. L. Gooch, Messrs. P. J. Howard, H. V. Hughes, W. J. Ironside, Captain J. McAllan, Major J. G. McGregor, Professor J. Macqueen, Mr. G. P. Male, Major E. S. Martin, Dr. R. F. Montgomerie, Major-General Sir John Moore, Captain S. J. Motton, Mr. R. Barons Nelder, Major R. H. H. Över, Major D. S. Rabagliati, Captain J. R. Rider, Mr. J. N. Ritchie, Captain R. Simpson, Major J. H. Taylor, Mr. A. Thomson, Captain W. K. Townson, Mr. W. Tweed, Dr. A. W. Whitehouse, Mr. T. Wilkinson, Professor G. H. Wooldridge, Dr. W. R. Wooldridge, Professor J. G. Wright, together with the Hon. Secretary (Mr. J. W. McIntosh), the General Secretary (Mr. F. Knight), and the Association's Solicitor (Mr. C. O. Langley).

The minutes of the July meeting of the Council, having been printed in the *Veterinary Record*, were taken as read and were confirmed and signed.

CORRESPONDENCE

(1) From the following members of the Council, intimating, with regret, their inability to attend the meeting:—Lieut.-Colonel H. G. Bowes, Dr. O. Charnock Bradley, Lieut.-Colonel J. W. Brittlebank, Messrs. J. C. Coleman, H. W. Dawes, Major Brennan De Vine, Major A. C. Duncan, Messrs. L. Hughes, T. Eaton Jones, W. Nairn, Captain A. W. Noel Pillers, Major Andrew Spreull, Mr. H. P. Standley (Junr.), the Hon. Treasurer (Captain Wragg) and Lieut.-Colonel T. Dunlop Young.

(2) A letter was read from the Swedish Veterinary Association in the following terms:—

> "The Swedish Veterinary Association herewith returns its cordial thanks for the kind invitation to be present at the 50th Annual Congress of your esteemed Association, to take place in Folkestone in August.
>
> "We deeply regret, however, that at present we find ourselves unable to comply with your kind request.
>
> "At the same time we have the honour of extending to your Association a very cordial invitation to send a delegate to our Annual Congress which will be held in Stockholm, Sweden, on October 15th, 1932."

It was unanimously resolved that the President for the ensuing year, or his nominee, be appointed to attend this Congress, and that the procedure adopted in the past with regard to expenses incurred in attending Continental conferences be followed in this instance.

BRITISH MEDICAL ASSOCIATION CENTENARY MEETING

The President reported that he had taken the opportunity of having a letter addressed to the President of the British Medical Association in the following terms:—

> "I am instructed on behalf of the President and Members of the National Veterinary Medical Association of Great Britain and Ireland to send hearty congratulations and best wishes to the President and Members of the British Medical Association now sitting in session at their Centenary Meeting.
>
> "This Association is confident that the deliberations of the British Medical Association will prove of great benefit to the future of Medical Science and consequently to that of Veterinary Science also."
>
> (Signed) F. Knight,
> *General Secretary.*

The President's action was warmly approved.

MEMBERSHIP OF THE ASSOCIATION

The following, having duly completed the requisite form of nomination and paid their subscriptions, were unanimously elected to membership of the Association with effect from July 1st, 1932:—Messrs. T. A. R. Chipperfield, M. Crawford, J. L. Dalzell, Alexander Dobie, Miss P. M. Edmunds, Messrs. H. H. Holman, R. Hopps, S. Jennings, and E. G. White.

FINANCE AND GENERAL PURPOSES COMMITTEE

The following report of a meeting of the Finance and General Purposes Committee, held on July 15th, 1932, was received and adopted:—

A meeting of the Finance and General Purposes Committee was held on Wednesday, July 15th, with the President in the chair.

The Hon. Treasurer presented a statement of accounts for the month of June which showed a balance in hand on June 30th of £1,103 3s. 7d. and liabilities amounting to £215 15s. 7d.

The Hon. Treasurer's statement was approved and authority was given for the payment of the liabilities specified therein.

The Committee unanimously decided to convert the Association's holding of £4,959 8s. 6d. 5 per cent. War Loan into the new 3½ per cent. issue, and it was agreed that the cash bonus of £1 per cent. be earmarked for future investment.

The form of request for conversion has been sealed and signed and lodged with the Bank of England and it is desired to obtain the Council's approval of this action.

At the request of Major Kirk, the Committee has discussed the desirability of establishing an "Information Bureau" at the offices of the Association, the purpose of which would be to collect and disseminate to Veterinary Surgeons information relative to members of the public who are undesirable clients.

While in sympathy with the proposal, the Committee came to the conclusion that it would be impracticable.

The Committee also had before it the following resolution from the Central Division:—

"That this Division recommends that the N.V.M.A. should collect evidence, lay information and be complainants on behalf of any member of the Association who desires to lay a charge of advertising or other misdemeanour against a fellow member of the profession."

After discussion, it was resolved to report to the Council that, in the opinion of the Committee, the subject of this resolution does not come within the province of the N.V.M.A., having regard to Article 17 of the Association's Articles.

By adopting this report the Council approved the Committee's action in regard to the conversion of the Association's holding of 5 per cent. War Loan into the new 3½ per cent. issue.

ANNUAL REPORT AND BALANCE SHEET

The Annual Report for the year 1931-32, and the Revenue Account and Balance Sheet for the year ending December 31st, 1931, were approved for presentation to the Annual General Meeting.

Nomination of Officers

President.—Professor J. F. Craig proposed the re-election of Lieut.-Colonel P. J. Simpson as President of the Association for the year 1932-33, and it was unanimously agreed to recommend to the Annual General Meeting accordingly.

Vice-Presidents.—It was agreed to recommend to the Annual General Meeting that the Vice-Presidents be as follows:—

For England and Wales (North): Mr. G. H. Locke.

For England and Wales (South): Major-General Sir John Moore.

For Scotland: Major J. G. McGregor (for re-election).

For Ireland: Professor J. F. Craig (for re-election).

Honorary Treasurer.—It was unanimously resolved to recommend that Captain W. G. Wragg be re-elected.

Honorary Secretary.—The Council unanimously resolved to recommend the re-election of Mr. J. W. McIntosh.

General Secretary.—It was agreed to recommend that Mr. F. Knight be re-elected General Secretary for the ensuing year.

Auditors.—The Council unanimously resolved to recommend that Messrs. Fairbairn, Wingfield and Wykes be re-elected the Association's Auditors.

Solicitors.—Messrs. Fowler, Langley and Wright were unanimously re-appointed the Association's Solicitors.

Editorial Representative.—On the proposition of Sir John Moore, Chairman of the Editorial Committee, the re-appointment was made of Mr. W. Brown, M.R.C.V.S., as Editorial Representative.

ANNUAL MEETING, 1933

The place for the holding of the Annual General Meeting of 1933 was considered, having regard to the renewed invitation of the Malvern Development Association to visit Malvern, and the receipt of an invitation from the Llandudno Urban District Council, supported by the University College of North Wales, to hold the meeting in Llandudno. Professor J. B. Buxton and Captain R. Simpson put forward the claims of Edinburgh, but it was agreed, after discussion, that no recommendation be made to the Annual General Meeting as to the place where Congress shall be held next year, but that the names of Malvern, Llandudno and Edinburgh be submitted to that meeting.

The meeting concluded with a vote of thanks to the President for his conduct of the proceedings.

ANNUAL GENERAL MEETING

Lieut.-Colonel Simpson re-elected President

The 50th Annual General Meeting was held at the Folkestone Town Hall on the afternoon of Wednesday, August 10th, 1932, the President (Lieut.-Colonel P. J. Simpson) occupying the chair.

The excellence of the attendance bore testimony to the wisdom of the newly-adopted policy of holding the Annual General Meeting in the middle of Congress Week instead of on the opening day, as heretofore. The Attendance List, and the list of those who sent apologies for absence, will be found following the President's Address in this issue.

The General Secretary (Mr. F. Knight) read the notice convening the meeting and also read messages of regret at inability to attend.

In extending a welcome to foreign and other delegates, the President said: "I rather anticipated to-day's agenda, and gave our welcome to the delegates at our opening meeting; but that does not preclude me from again to-day extending to them our hearty welcome and also our thanks to them for supporting the Congress as they have, and for their participation and interest displayed in the discussion of papers and so on.

"I do hope in future years the number of delegates will increase, and that they will benefit by their visit to us, and conversely, that we shall benefit from the words of wisdom that may fall from their lips during the course of discussion. I give them a very hearty welcome." (Applause.)

Presidential Address.—The President proceeded to deliver his Presidential address, which was heard with great interest and was most enthusiastically received, and which is reproduced at the commencement of this Special Congress Number of the *Veterinary Record.*

ELECTION OF PRESIDENT

The General Secretary read out the following resolution, which was passed at the Council Meeting held immediately prior to the Annual General Meeting: "Professor J. F. Craig proposed the re-election of Lieut.-Colonel Simpson as President of the N.V.M.A. for 1932-33, and it was unanimously agreed to recommend to the Annual General Meeting accordingly." (Prolonged applause.)

Professor J. F. Craig now said that after the applause they had just heard it was unnecessary for him to say anything to make that proposal acceptable to that meeting. Therefore, he only desired to repeat what had been formally put forward by the Secretary of the Association, namely, that their good President, Colonel Simpson, be re-elected.

Mr. P. J. Howard (Ennis, Co. Clare) said he had already seconded the motion, and it was quite unnecessary for him to recommend it. Indeed, from the applause given, it was unanimously accepted. (Applause.)

The motion was then put to the vote, and was carried unanimously and with acclamation.

The President said that matter was sprung upon him, he was going to say rather unfairly, but he did not mean that too cruelly; but it was sprung upon him at the meeting an hour or so before, when his name was proposed to be put forward to them at that present meeting, and he felt then by the reception that his name received that he was almost in duty bound to accept the nomination. (Applause.)

"My name has now gone forward to you at this annual meeting," continued the President, "and I can assure you it touches my heart very strongly by the very kind expression that you have given to the proposal that I should be your President for another year. (Hear, hear.)

"I am hoping that by the applause that was given you have forgiven me all my past sins, and have given me another chance to make good again, but I have taken on the office with a considerable amount of misgiving. You know what we all do when we are finishing a race: we put on that final spurt and run ourselves clean out, to win.

"I have just gone through that, and have put in my best to make this Congress a success, but it seems you have given me another twelve months' hard. (Laughter.) I will do my best to look after the "National" as I have done in the past; but if I am perhaps a little remiss in not attending so many divisional meetings, or not attending something like 49 Committee meetings and about ten Council meetings, if I do not come up to that record next year, I will ask you to forgive me; but I will try to carry the "National" forward, because I do feel it is now getting on to its legs.

"It is going to go forward, and is going to be a voice in the land, and there is every indication, year by year, that that spirit of *cameraderie* between ourselves is growing rapidly. We are all out to back one another up, and so are out for the good of the profession. I do hope that even in the next year we will see an even greater forward march than we have accomplished in the past two or three." (Applause.)

MEETING PLACE FOR 1933

The General Secretary then read a minute from the Council meeting dealing with the meeting place for 1933, as follows: "It was agreed after discussion that no recommendation be made to the annual general meeting as to the place where Congress shall be held next year, but that the names of Malvern, Llandudno and Edinburgh be submitted to that meeting."

The President said he might perhaps amplify that a little by saying that Malvern seemed very anxious indeed to have the Congress next year, having approached the Association for the second time. The Congress had received a very strong invitation backed by the University College of North Wales to go to Llandudno; and they had had very strong claims for going to Edinburgh put forward by Professor Buxton, and backed by Captain Simpson, of Carlisle. At the Council meeting it was decided to leave that matter in the meeting's hands, with the recommendation put to them and the three places put before them, and they would leave it to that meeting's judgment to decide to which place they should go.

Major H. Kirk said he wanted if possible to advance the claims of the seaside town. (Applause.) They had had no invitation officially, he thought, from Edinburgh—it was a suggestion by one of the members of the Council; but they had had an invitation from Llandudno, backed by an invitation from the University College of North Wales, and he was sure in that college that Congress would have ample accommodation for its needs. Malvern had, of course, been very kind to them; they had twice written asking them to go to Malvern, but it was an inland place, and might not be very attractive, perhaps, to members who must make that visit also a holiday. He wanted to propose that the Congress should be held at Llandudno next year. (Applause.)

Mr. H. V. Hughes (Hon. Secretary, North Wales Division) said he had great pleasure in seconding that proposition—North Wales members were glad to support the welcome. They were only too glad to unite in that invitation for the Association to go to Llandudno. He left it entirely to their good judgment.

Mr. G. H. Locke, Dr. R. F. Montgomerie and Dr. Share-Jones all supported this proposition.

When put to the vote, the proposition was carried enthusiastically.

The public portion of the proceedings concluded with the passing of a hearty vote of thanks to the President for his address, on the motion of Professor J. B. Buxton.

. . . . .

After a brief adjournment, the meeting was resumed, when only members were admitted to the Congress hall.

Annual Report and Balance Sheet. — The President said the Annual Report and Balance Sheet had been reproduced in the Congress handbook. He asked if they wished him to go through it page by page and have the Balance Sheet read

out, or whether they would make a proposition to the effect that they should receive and adopt them straight away when they had heard the certificate of the Auditors' Report read as it appeared at the bottom of the balance sheet.

The Secretary then read the auditors' certificate.

On the motion of Professor J. F. Craig, seconded by Mr. A. Gofton, the Report and Balance Sheet were taken as read and were received and adopted.

ELECTION OF OTHER OFFICERS

Vice-Presidents.—The Secretary announced the following recommendations of Council for the election of four Vice-Presidents:—

For England and Wales (North), Mr. G. H. Locke.

For England and Wales (South), Major-General Sir John Moore.

For Scotland, Major J. G. McGregor.

For Ireland, Professor J. F. Craig.

There being no other nominations, these gentlemen were elected Vice-Presidents for the ensuing year, on the motion of the President, seconded by Colonel J. F. Dixon.

Hon. Treasurer.—Following the recommendation from the Council, the President then formally moved the re-election of Captain W. G. Wragg as Hon. Treasurer. In doing so, he said he had some 18 months' experience of Captain Wragg's services, and he assured them he was a conscientious worker on behalf of the Association and watched the finances very closely.

Mr. Gofton seconded, and the motion was carried.

Hon. Secretary.—The President said that, with regard to the election of an Hon. Secretary, he wished to point out at that meeting that the articles of their Association, as they stood that day, did not legalise the position of an Hon. Secretary. They had had an Hon. Secretary for many years, but in their articles of association no provision was made for one. Therefore he was going to suggest that when they elected a gentleman to that position, they did so just provisionally, until the alteration in the bye-law, which would come on later at the extraordinary general meeting, was carried. If that was carried—as he expected it would be—the Hon. Secretary would be a legal officer of the Association.

After the Secretary had read the Council's recommendation of the re-election of Mr. J. W. McIntosh to the office of Hon. Secretary, the meeting unanimously passed a resolution supporting the Council's recommendation, moved by Dr. Share Jones and seconded by Mr. H. Begg.

The President said he was very glad that election had taken place, for he would like to bear testimony to the help he had received from Mr. McIntosh during the past year. (Hear, hear.)

General Secretary.—Following a recommendation from the Council, Mr. F. Knight was unanimously re-elected General Secretary, the President paying a tribute to his efficient and conscientious work. Mr. McIntosh seconded.

Auditors.—On the motion of the President, seconded by Mr. L. W. Bovett, Messrs. Fairbairn, Wingfield and Wykes were re-appointed as the Association's auditors.

As there was no further business to be transacted at the Annual General Meeting, the President then declared that meeting adjourned to the following Saturday morning, when the closing meeting of the Congress would be held.

EXTRAORDINARY GENERAL MEETING

Proposed Alterations in Articles of Association

QUESTION OF CHANGE OF TITLE DEFERRED

An Extraordinary General Meeting of the Association followed immediately, when proposed alterations in the articles of association were considered.

The President said he hoped that thought and deliberation had been given to the suggested alterations in the articles of association, because he believed they would afford greater scope for the work of the Association, and perhaps, if he might term it so, the better working of the Association. There was nothing very radical amongst them, but they were little things which would make the going a good deal easier for some of their office bearers and be for the good of the Association.

He then put Resolution 1 to the meeting: "That the name of the Association be altered from "The National Veterinary Medical Association of Great Britain and Ireland," to "The British Veterinary Association."

Mr. P. J. Howard (Ennis, Co. Clare) said before that resolution was considered, he would like to propose that the consideration of it be postponed for another time. At the present time it was really most inopportune that the matter should be discussed at all. They were aware that they were, perhaps in an unhappy position at the present moment in Ireland, in reference to national matters, and consideration of that question would be better left alone for a more opportune moment. He did not wish to discuss the matter any further with them, but to ask them to agree with the amendment he had put before them.

The President: "You wish this matter deferred for a period of twelve months?"

Mr. Howard: "Quite so."

Professor J. F. Craig said he desired to second that amendment, and for the same reason that had been put forward by Mr. Howard. He would like to see a great many more Irishmen members of the Association, and perhaps the postponement of that matter and the consideration the Association always gave to Irish members would be of

service in encouraging a number of members from Ireland.

Dr. Share-Jones asked if it would be the desire of the members that that part of the business be regarded as work in Committee, so that they might not be compromised in any way.

The President said he was afraid that matter, being referred to an extraordinary general meeting, must be discussed as a general matter and could not be considered in private.

Dr. Share-Jones said it only occurred to him that there were aspects of that which would put them in a delicate position. The position was extraordinary, and he had wondered if they might not take it as consideration in Committee.

Mr. Hugh Begg said it occurred to him that if they did not see their way to support Mr. Howard and Professor Craig in that matter, they would be doing a big disservice to the Association. He advised that they took it straight from the horse's mouth that it would be another injustice to Ireland if they did not pass that amendment that had been proposed.

The President reminded the meeting that the resolution had been put before everybody in the shape of that printed notice, and anything against that resolution must be taken in the form of an amendment. He was quite prepared to take Mr. Howard's remarks as in the form of an amendment to the resolution.

Mr. G. P. Male desired to support the amendment, not only for the reasons given, but because he also had a great affection for the old name, though perhaps he was a little old-fashioned. It was very well-known all over the world. It was known among medical men, by Government authorities and everybody who had any connection with their profession, and he was rather afraid if they changed it people would wonder what that other association was, and where the "National" had got to. Having that affection for it, he would be sorry to "swop horses while going over the stream," and until the "National" had got stronger, he would prefer that the name remained the same.

Mr. A. Gofton said he was very intimately connected with the work which led to the reconstitution of the "National" Association on its fresh basis as long ago as 1912 at their meeting at Carnarvon. A great deal of discussion took place at that time as to the title of the Association, and their Irish friends were very insistent upon a title being given to the Association on the lines which had been chosen and which had been in operation for the last 15 years. In recognition of the case put forward by the Irish representatives on that occasion, the speaker was tempted to think an alteration of the title on the lines suggested at the present time might do something to alienate the affection of their Irish brethren for that Association. He would extremely regret any step taken by the Association which might have that effect.

Dr. R. F. Montgomerie said he was sure Mr. Gofton would agree with him that some people had come into the Association since 1912, and from enquiries he had made, he found there was a certain body who were of opinion that a change to that title, if it did not come now, was bound to come sooner or later. He was not going to speak on that point in view of what Mr. Howard had said. He saw no reason for discussing a change until they considered the amendment.

He rose to ask the President to tell the meeting, from the solicitor, what would happen if they adopted that amendment and postponed that matter. It seemed to him as he understood the matter that it was going to cost them a good deal to have their articles changed in any way at all, and he thought the meeting should know. He was not saying whether he was in favour of it or against it, but he would like the meeting to know from the solicitor what position they really put themselves in if they accepted that amendment.

Mr. C. O. Langley, the Association's solicitor, said the expense attending the alteration of any articles was mainly the Registrar's fees and printing, but if they saw fit to pass the second resolution as it stood, or modified, they need not have their articles reprinted for the sake merely of altering their name. Application had been made to the Board of Trade and to the Registrar to approve their new name if passed, and that they would have to apply for next year, but that was not a difficult matter, nor was it expensive.

Dr. Montgomerie said he was certainly going to support the amendment.

Dr. Share-Jones then rose, and said, "I speak to the amendment. I say that, having regard to the extreme delicacy of events in Ireland at this moment, we might have seen our way clear without discussion at all to have postponed a matter such as this, but the meeting does not seem to agree with that view.

"We have had a tremendous task, speaking from the other body, in securing an arrangement with Ireland. I happened to be one of the deputation over there at the time; that was to secure, notwithstanding the fact that Ireland has home rule, to secure unity between Ireland and Great Britain in matters veterinary.

"It seems to me to be most unwise, and I would ask our legal advisor to consider this very seriously. We must not do anything which would eliminate the name of Ireland from the title of an Association of this kind. It may stir up much more feeling than would appear on the surface. I support the amendment most strongly, and hope no further discussion will take place on it."

Professor James Macqueen said he had listened to various remarks that had been made regarding the resolution, and to Mr. Howard's amendment. He had, in addition, had a long conversation with Mr. Howard, and although there were certain

things to be said in favour of postponement, that did not exactly dispose of the situation. Dr. Share-Jones had imported into that question some Irish political considerations which the speaker considered did not belong to that particular point. (Applause.) The resolution proposed that the name of that Association should in future be the British Veterinary Association. In making that suggestion, they were following the lead of the British Medical Association.

There were certain considerations in connection with the word "British." Ireland at the present time was a part of Britain, that was to say, it was a British Colony or an independent State, if they liked, but they had certain considerations in connection with their colonies. The affiliated associations to that "National" should receive their attention at all times. (Applause.) Going back to the Irish Free State, they had got to ask themselves: "Are those gentlemen in the Irish Free State loyal or not? Are they Britishers?" If they were not British in feeling, then the Association did not want them. (Applause.) That was the way to view it.

Although the Irish practitioner was in the Irish Free State, there was no suggestion that he was opposed to the title "British," and there was no suggestion that the practitioners of the Irish Free State had any complaint against the word "British." Was there any criticism of that sort against the British Medical Association? It had been in existence for many years.

The speaker had no desire to oppose the feeling of the meeting. At the same time, he wished to say that the proposition to change the name was introduced at Norwich last year. It had been simmering a year, and there had been no official opposition to the adoption of the new name. The first indication of complaint about the use of the word "British" had emanated from their friend Mr. Howard, unfortunately supported by their friend Professor Craig.

Why should they not adopt the word "British"? They must not wait too long, for that was a progressive Association. They had the articles of the constitution drawn up, and the word "British" stood there. There was not a sound reason why the term "British" should not be adopted at once, and they should become the British Veterinary Association.

The President said he had purposely withheld two letters addressed to the Secretary of the Association on the subject, because he was waiting to see "which way the cat was jumping." He now asked the Secretary to read the letters.

The text of the letters was as follows:—

"I beg to inform you that the following resolution was passed unanimously at the Annual General Meeting of the Veterinary Medical Association of Ireland held in Dublin on February 3rd, 1932:—

"That the Veterinary Medical Association of Ireland strongly protest against the proposed change of title of the National Veterinary Medical Association of Great Britain and Ireland on two grounds, *viz.*:—

1. That Ireland is a separate nation from Great Britain.
2. That if the name of the Association were changed as proposed, its representations to the Free State Government on matters concerning the Veterinary Profession in the I.F.S. would not be considered."

Yours faithfully,
J. J. O'Connor,
Hon. Secretary,
Veterinary Medical Association
of Ireland.

March 24th, 1932.

. . . . .

"With reference to your letter of the 15th April last relative to the proposed change of title of the N.V.M.A. of Great Britain and Ireland, I have to state that this matter was again considered at a General Meeting of this Association on the 3rd instant and it was unanimously decided to adhere to the resolution of the 3rd February protesting against the proposed change of title.

"The meeting decided, however, that if a change of title is considered necessary, no objection would be made by this Division to the title of 'The British and Irish Veterinary Association.'"

Yours faithfully,
J. J. O'Connor,
Hon. Secretary,
Veterinary Medical Association
of Ireland.

August 5th, 1932.

. . . . .

Colonel J. F. Dixon begged to suggest that they exclude all political considerations and ask themselves, was the change of that title bringing them to a better title, and consider that point solely for the good of the Association and for the good of the veterinary profession.

He would suggest that the title suggested was much to be preferred to the present, and to some people misleading, title. (Applause.) He had on more than one occasion been asked by persons in positions of authority, what was the Association? They could not make out whether it was veterinary or medical. He thought if the title were changed as proposed, there would be no doubt left.

Major D. S. Rabagliati said he entirely agreed with Colonel Dixon, and regretted that politics had crept in to the extent they had. There were nine affiliated colonial associations, and he asked if any of them was recognised by their present name. Under the proposed name, they certainly would be recognised. He did not see why there should be any feeling on the other side of the Channel if the name were changed, because the Association were only too pleased to have their Irish friends with them. The present name was

1.—Assembling for the official photograph outside the Royal Pavilion Hotel, Folkestone.

2.—The Hon. Secretary (Mr. J. W. McIntosh), right, enjoys a cigarette.
Mr. F. L. Gooch (Stamford) and Professor Macqueen, extreme left.
The ladies include Mrs. F. Trewin, Miss McIntosh, Mrs. H. King, and Mrs. Harry Locke, all regular visitors to the Congress.

3.—Always a popular visitor to Annual Congress, Mrs. J. B. Buxton and her brother-in-law, Mr. F. Buxton, of Highgate.

4.—Here are seen the President and Mrs. Simpson. The group includes Colonel Stordy, Mr. McIntosh (Hon. Secretary), Professor Macqueen and Mr. F. Knight (General Secretary).

ridiculously cumbersome, and he felt a change was called for.

Mr. H. E. Bywater expressed himself as being in entire agreement with the speakers on the point that the name of the Association was much too cumbersome, and the British Veterinary Association was logically the only name which really described the Association.

Mr. W. Tweed said he saw no cumbersomeness in the present title, and after all, there were two branches, medical and veterinary medical, and he thought that at the present time they ought not to change the name. In his view the amendment was perfectly sane, and they ought to defer the matter for twelve months, and, if they agreed among themselves then, it should be changed.

Mr. P. F. Dolan said he hoped the members would support the amendment as put forward by Mr. Howard.

The President then put the amendment to the meeting, and it was carried by 52 votes to 23, being then passed as a substantive resolution.

The President next formally moved the adoption of Resolution 2 (embodying the proposed alterations). These alterations, said the President, would have to be submitted to the Board of Trade, and they might or might not make some alterations in the wording.

Mr. Male seconded.

Mr. Gofton said it seemed to him that in the latter part of that section of the resolution combining articles 73 and 74, *viz.*: "they shall co-opt not fewer than six members, especially any living within the area in which the annual general meeting is proposed to be held," they should substitute the word "resident" in place of the words "especially any living."

This was agreed, and the resolution was received and adopted.

The President said that legalised the position of Mr. McIntosh as Hon. Secretary.

This terminated the business of the Extraordinary General Meeting.

The Medical Officer of Health (Dr. A. M. Marsh Roberts) reported to the Caerleon Council recently that wholesale slaughtering of animals was going on and meat was being sold privately contrary to the laws governing the preparation and sale of foodstuffs. The Council decided that the Medical Officer should pursue the matter with a view to obtaining concrete evidence.

* * * * *

Stomach worm eggs under favourable conditions may reach the infective stage within four days after the eggs have been eliminated from infested sheep. Pastures may remain infested for 12 months, after all sheep have been removed. A non-infested sheep may begin eliminating stomach worm eggs within 18 days after being placed on infested pastures or lots, therefore treatment should be applied every 17 days.—*Vet. Med.*

The Social Programme

The happy recollection of Folkestone as a delightful pleasure resort which will remain with every participant in the 1932 Congress of the Association is all-sufficient justification for the absence of a heavy social programme. There can be none who failed to appreciate and to take advantage of the manifold opportunities thereby afforded for revelling in the ever-present sunshine on the glorious Leas, or bathing and basking on the fine sweep of beach that runs from Folkestone to Dymchurch. Excursions and other tours were, indeed, apart from the Canterbury visit, unwanted: it was so patently a case of going further and faring not nearly so well. At our doors was opportunity for the most refreshing prelude imaginable to the festive pleasures of the evening, which were provided in full measure, as heretofore. A most pleasing feature of these was the presence of a large number of lady visitors who, it may be remarked, were particularly delighted with the regard paid to their tastes—and not theirs alone—on the occasion of the Annual Banquet, when speech-making largely gave place to music and dance. The setting aside of a room at the Woodward Hall as the Ladies' Rendezvous during Congress week was a further innovation which added greatly to their enjoyment.

* * * * *

THE PRESIDENT'S RECEPTION

It says much for the popularity of Colonel and Mrs. Simpson that the outstanding "record" created by the 1932 Congress in point of numbers was associated with the attendance at the President's Reception which was held in the Winter Garden of the Royal Pavilion Hotel on the evening of the opening day. The President and his lady welcomed a company of nearly 250, which included the Mayor and Mayoress of Folkestone (Alderman and Mrs. J. W. Stainer) and saw to it that the event fulfilled its essential function of bringing about the maximum number of contacts, whereby Congress acquires, at the outset, a happy social atmosphere which abides throughout. Nothing was omitted which could contribute to the enjoyment of the company who, as the evening wore on, made their way to the ball room where, on an excellent floor, dancing continued until "the small hours" to the accompaniment of the Royal Pavilion Hotel Dance Orchestra.

The great drive of mountain sheep over the Berwyn range and moorlands of Denbighshire and Merionethshire has been completed, it being estimated that by the end of August a quarter of a million sheep in North Wales had had their annual chemical dip against diseases. The operations were under the supervision of Government officials who prepared the chemical solutions.

XUM

CONGRESS BANQUET

A Delightful Evening

TWO WELL-MERITED PRESENTATIONS

Brilliant scenes marked the annual Congress banquet, which was held in the beautiful Winter Garden of the Royal Pavilion Hotel on the Wednesday night.

Over 250 delegates and the ladies accompanying them attended the function, which was one of the most sociably enjoyable and successful banquets in the history of the Association, and a most delightful evening was spent by the whole of the company.

The President (Lieut.-Colonel P. J. Simpson) was in the chair, and among those accompanying him at the top table were: Mrs. Simpson, the Mayor and Mayoress of Folkestone (Alderman J. W. and Mrs. Stainer), Councillor A. Dallas Brett (Chairman of the Health Committee of the Borough of Folkestone), Professor J. B. Buxton (President of the Royal College of Veterinary Surgeons), Sir Weldon Dalrymple Champneys (representative of the Ministry of Health), Lady Dalrymple Champneys, Dr. R. W. Tuck (Veterinary Representative of the United States Bureau of Animal Industry), Brigadier W. N. Herbert, C.M.G., D.S.O. (Commanding 10th Infantry Brigade and Troops at Shorncliffe and Lydd), Alderman J. E. Quested, J.P., Professor J. F. Craig (Principal, Dublin Veterinary College) and Mrs. Craig, and Major T. Dalling (Local Hon. Secretary).

Musical selections were given by the hotel orchestra during dinner, and were much appreciated.

"THE TOWN OF FOLKESTONE"

After the company had honoured the loyal toast, Professor Buxton rose to propose the toast of "The Town of Folkestone." In doing so, he said that when a short while ago he succumbed to the very pleasing manner of their hard-working Local Secretary and undertook to propose the toast of "The Town of Folkestone," he had placed himself upon a very slippery slope. That the slope was a precipice he did not realise until he actually arrived in Folkestone.

To be perfectly frank with them, he was very ill-fitted to propose such a toast, because he was perfectly confident he could not do it full justice. Never having proposed a toast of that kind before, he very naturally and perhaps wisely went to a gentleman who was well versed in such matters and asked him if he would tell him how to set about it. This man said that it was quite simple—he had done many himself. He told the speaker he had simply to get hold of a number of books and consult certain tomes, such as the Encyclopœdia Brittanica, get dates and deal extensively with the history of the place.

Having respect for this person, the speaker proceeded to do so, and when he had prepared an excellent dissertation, he submitted it, as all married men should, to his wife. She read it and then said, "What are you going to do with this?" He replied, "I am going to tell them all about it," and she said, "You are going to do nothing of the kind." (Laughter.)

It seemed to him, as that was obviously an improper way of dealing with the matter, that he might come down and see Folkestone and trot round a little after the Mayor, get to know some of the Mayor's peculiarities and one or two dates and so on in relation to his genealogical tree, and fulfil his function in that way. But they knew what happened at the first meeting they had at Folkestone—(laughter)—that was String Number Two gone.

Then he really began to wonder. So he started to go about Folkestone, and not having been to the town for 23 years, he found many new things to interest him. It was not until he had walked about Folkestone that he realised that after all the toast was one of the easiest the speaker had ever tackled, because they would all be intensely sympathetic with him, and they would not need him to extol the many beauties and many virtues of the town.

They knew very well, perhaps better than he did, the beauty of the Leas, they knew those magnificent gardens--and after all, what was the past history of a place? It was its present life that counted, and if he were asked what impressed him most in Folkestone, he would say the amazing orderliness of the town. (Hear, hear.) He thought most of them would have been impressed, as he was, by the extraordinary orderliness of the town, its well-kept streets, its well-behaved inhabitants—and its equally well-behaved visitors. (Laughter.) In fact, the general atmosphere of well-being and God fearing.

With that toast he was going to couple the name of the Mayor, and there again he was spared much, because they had had ample opportunity of getting to know the Mayor very well indeed during the time they had been in the town. They knew what a splendid welcome the Mayor gave them on Monday. (Applause.) They knew that the Mayor had graced their functions with his presence, and what was much more, they also knew that he had attended some of their meetings.

"I think that a man who does that is a bit of a hero," proceeded Professor Buxton, amid laughter, "because, you know, in looking round at the meetings, we have not half our own members there; and one cannot help but appreciate the interest which his Worship has taken in us and in our deliberations, in our entertainments and our intellectual intercourse one with another."

The toast was accorded musical honours.

In replying, the Mayor said that Professor Buxton, in the very kind speech that he had delivered, told them that prior to getting up to make his speech, he had consulted his wife. Now, the present speaker had not had that advantage; he had to make his reply without consulting his wife. Professor Buxton said that he found himself upon a slippery slope, and without that support, the speaker was afraid that he might come a cropper, but he was sure his wife would approve of his saying that they in the Borough of Folkestone were extremely gratified that the Veterinary Conference had evidently gone so well as it had.

"I am told by your President that the Conference of 1932 has eclipsed any other previous Conference of the Veterinary Association of Great Britain and Ireland," said the Mayor, amid applause.

"Your numbers have been greater, and the spirit and enjoyment of your Conference, he assures me, have been excellent while you have been in the town. If that is the case, Folkestone is very gratified indeed."

Proceeding, the Mayor said they had had many conferences in the town, and he was delighted to say every conference had borne similar testimony to that which Professor Buxton had given of the enjoyment of the landscape, the orderliness of the town to which he had referred and the delight of making Folkestone the venue for their meetings. He was very happy indeed to think the Veterinary Conference was no exception to what had been their experience with every other conference that had visited them. (Applause.)

The orderliness of the town had been mentioned, and also the good behaviour of its inhabitants. He was very happy to hear that, because it was not always the same testimony that was borne. He remembered on one occasion a lady came to him and said she had never seen so many lunatics in her life as she had seen when she visited Folkestone. (Laughter.) He assured her that the people were, like herself, visitors to the town. (Laughter.) She seemed to find that hard to believe, but the speaker told her he knew all the natives, and they were all sane people; and if she had seen a great many lunatics, they must be visitors like herself. That was not the case with the Veterinary Conference. Professor Buxton said that veterinarians were just as well behaved, and as sane, the speaker presumed, as the rest of the community among whom they had come. That was very gratifying indeed. (Laughter.)

He was rather impressed with the programme that they had arranged, and the excellence of the debates they were having on various subjects, and the good Professor had said he saw the speaker at one of the Conference discussions. He soon found himself out of his depth, but he endeavoured not to splutter, and he enjoyed hearing papers that were read; he thought they were a mighty learned lot of people, talking about streptococci and staphylococci. (Laughter.)

It had been an extraordinary pleasure to be amongst them. They would allow him to say, he had no doubt, with the feeling that such a demonstration provoked, that the personal allusions that Professor Buxton made to him, and the hearty way in which they received the toast and sung "For He's a Jolly Good Fellow" had been very touching. He felt very gratified to them for such a demonstration. How little he deserved it he was more conscious than they were, but it was really a great pleasure to be Mayor of a borough such as that, and to welcome conferences such as theirs, and to find such a kindly spirit extended towards the head of the civic Borough in which they happened to be. He thanked them very much for their reception. (Applause.)

THE N.V.M.A.

Councillor Dallas Brett, who submitted the health of "The National Veterinary Medical Association," made allusion to the fact that that was the Association's Jubilee Congress, and pointed out the vast difference which had come over their profession and the speaker's own—the legal—during the last century or so. It was due to a large extent to the efforts made by the associations which governed their respective bodies in raising the professions to what they were to-day.

How did the Veterinary Association stand at the present time? It was really in point of fact an imperial veterinary association. It had 24 districts, divided into four branches, which governed the whole of the United Kingdom, including the Irish Free State. But it was not only that. It was connected with kindred associations over the whole of the British Empire. They had associations connected with it from British Columbia, India, New Zealand, South Africa, Northern and Southern Rhodesia, Uganda and Kenya Colony and Protectorate.

"As a matter of fact, your Association, wisely governed, is influencing the whole opinion in regard to veterinary work over the whole of the British Empire and practically extending its influence all over the world," declared Councillor Brett.

The speaker said he thought he might say very shortly why he thought their Association had been able to build up its organisation in the way that it had. That was because their Association had been more or less altruistic in character, and public spirited in endeavour. They had not confined themselves to their own profession, but they had tried to do, through the

influence they undoubtedly had, good to humanity as a whole. If they had not been altruistic, if they had not governed their Association on those lines, there was one person who would never have been a patron of their Association—that was his Royal Highness the Prince of Wales. (Applause.) When the Prince of Wales became a Patron of their Association, he put the hall-mark of good work upon their endeavours; because they could take it from the speaker, and he thought it was known throughout the length and breadth of the Empire, that the Prince of Wales did not lend his name to anything that was not for the public good.

One constantly had before one in dealing with health matters, even in a small district like that of Folkestone, and one constantly saw, the enormous amount of waste which went on through diseases. He knew their Association was now making a great endeavour to eradicate tuberculosis in cattle. If they saw the monthly returns in a district like that, they would realise what enormous waste there was, apart from any risk to human beings. That was why he said their Association was altruistic. They were trying to do not only the country, but the farmers who employed them, all the good they could through their skilled work.

He understood their Association with its various ramifications gave their skill and ability free to people who were too poor to afford their services to animals. That was good work—for the animals and for themselves. It was appreciated by the country, and was one of those things which brought their Association right up to the top of the tree.

At the head of their Association they had a man at the present time who had been elected three times to the position of their President. (Applause.) In the wise governing of their Association in the past, when they wrote the names up of those who had done well for their profession and for their Association, the name of Colonel Simpson would not be least amongst those they would desire to honour. (Applause.)

This toast was also most enthusiastically received, and was accorded musical honours.

The President, in responding, said Councillor Dallas Brett had said some very nice things about their profession and their Association. Not only had he done that, but the speaker thought he must have inculcated into all of them a wish and desire to do even better than they had done in the past. (Hear, hear.)

The speaker always said he was of a retiring nature, but regarding the "National" he was not going to be so retiring. He was going to boast that the "National" had gone forward with big strides in the last few years. He was talking of the last 15 or 20 years, and he was convinced that the "National" would go still farther. It had been a very great pleasure to him to see that gathering of themselves at Folkestone, and to be able to judge of the progress they were making, the good fellowship that was growing up among the members of the profession, whether members of that Association or not, as compared with what he could remember.

Although he called himself a comparatively young man, he could remember the days when practitioners living practically next door to each other never saw each other and never spoke to each other. This the "National" had broken down altogether, he thought, and they were now all jolly good fellows and glad to meet each other. That was a splendid thing the "National" had achieved. (Hear, hear.)

It had been a quick, live-growing Association, and he could see before it, he hoped, a very rosy future, and with the kind words and advice which had been given to them, he was sure it would stimulate those of them who had anything to do with the governing of that Association to put their backs into it, and in the next two or three years to see the Congress twice as large as they had there that day. At any rate, he felt they would make another record again next year, when they were all going to foregather at Llandudno. (Applause.)

During the evening, the speeches were pleasantly interspersed with musical and humorous items, which were contributed by Miss Kathleen Arnold, soprano; Mr. Vernon Jones, baritone; Mr. Ernest Hastings, in songs and humour; with Miss Winifred Catford as accompanist.

PRESENTATIONS

In an interval of the programme, the President presented a silver cigarette case to Miss Arnold as a mark of appreciation of her services to the Association at that Congress.

In doing so, the President said the Association was under a deep debt of gratitude to Miss Arnold. Miss Arnold had not only come there that night and given her services as a vocalist, but she had been doing yeoman work for weeks past in assisting their Local Hon. Secretary, Major Dalling, in the colossal work of getting that Congress together. (Applause.)

Perhaps many of them did not at first sight recognise the Miss Arnold singing so charmingly to them from the stage as the Miss Arnold so conscientiously and in such a business-like way paying out tickets and doing all the very necessary work at the office at the Woodward Hall, but she was one and the same person. It was therefore with great pleasure that, on behalf of the Association, he asked her to accept that small gift as a mark of appreciation of the very valuable services she had rendered to the Association at that Congress.

In accepting the gift, Miss Arnold returned thanks in a few gracious words.

A presentation of a gold wrist watch was then made by the President to Major Dalling. The President said that all who attended that Congress knew and appreciated the enormous amount of work that was done voluntarily by the Local Hon. Secretary. This year they had Major Dalling, from Beckenham. Major Dalling had perhaps suffered some disadvantages in that he had not been on the spot all the time to watch carefully over the growth of the Congress and to make all the necessary minute arrangements which had to be done to make the Congress a success; ngvertheless, his efforts had proved that he had made a success of that Congress. (Applause.) On behalf of those attending the Congress, he would ask him to receive that little token, which really was a very inadequate one, for the great services he had performed for them.

Major T. Dalling, in expressing his thanks, said it had given him the greatest possible pleasure to have done what lay in his power to make that Congress a success and if they were pleased with what he had done, he was satisfied. There had been worries attached to the work, but that reception quite made those worries vanish. He had had great assistance from many people, and he would especially like to mention Mr. Hogben and Mr. Knight. (Applause.)

The President then read a letter which had been received from the Rt. Hon. Sir Philip Sassoon, Bart., the Borough Member. The President said they had hoped to have had Sir Philip Sassoon with them that night, and he would have been there but for an urgent engagement at the last moment. However, he had sent such a charming letter that he must read it to them.

Dear Mr. Dalling,—It is with very great regret that I find myself unable to be present at the dinner of the National Veterinary Medical Association on Wednesday evening. I hope that you will convey to all present at the dinner my appreciation of their kindness and courtesy in asking me to join them and my best wishes for a happy and successful meeting.

I fully appreciate the honour which the Association has conferred on Folkestone by selecting it as the scene of their Jubilee Congress; and also the privilege which the Association has thereby conferred upon Folkestone residents of hearing at first hand how widely ranged are the activities of the Association and of the veterinary profession, and how important an influence those activities have upon the welfare of mankind.

As the subjects chosen for discussion at the Congress show, it is scarcely too much to say that no animal which is of service to man, or which suffers from disease which may affect the health or throw light upon the sickness of man, is outside the scope of your investigation and inquiry. In the endless conflict against disease and sickness, the veterinary profession takes its stand side by side with the medical profession as allies in the same great cause.

Largely by the discoveries and the precautions which we owe to the Association and its members, tuberculosis is being driven gradually into retreat. Incalculable suffering has been prevented, unnumbered lives have been saved and enormous loses in money have been avoided by the investigations which have been and are still being so carefully, so painstakingly and skilfully pursued.

I am sure that all who realise what the work of the Association really is, and how closely the interests of humanity—in all senses of the word—are bound up with it, will join with me in wishing every success to the Jubilee Congress and to the future efforts of the Association.

Yours very sincerely,
Philip Sassoon.

25, Park Lane, W.
August 5th, 1932.

The company greeted the letter with much applause.

Following a musical interlude, a move was made to the ballroom, where dancing continued until a late hour.

* * * * *

THE CANTERBURY PILGRIMAGE

A Reflection

By W. H. Brooke, m.r.c.v.s.

On the Wednesday of Congress week a large party of ladies, and a sprinkling of gentlemen who could not resist its appeal in spite of professional attractions, visited Canterbury—one of the greatest shrines of British Christianity and second only in importance to Glastonbury. What a compliment was paid to the ladies that it should be thought that to them exclusively belonged the gentle appreciation of the spirit of Canterbury! I wonder who was responsible for labelling this visit "Chiefly for ladies." Homage paid by all to the animating spirit of so venerable a place would surely have carried a blessing upon our deliberations and have furthered their value. In this connection many of our members who attended the successful Aberdeen Congress would recall the inspiring inscription displayed over the beautiful portal of Marischal College—its meeting place—"*Timor Domini initio sapientiæ.*"

If we could seek out the forces which have influenced and shaped much that is lofty, honourable and beautiful in the British character, and have given it a name which ranks so highly among the nations, here it is overwhelmingly represented and made appreciable. A visit to Canterbury is an inspiration and I hope a future Chaucer may include a veterinary surgeon in academic dress among his company of pilgrims.

What a privilege and joy the possession of an historical sense carries, and with what extreme care should it be nurtured in our schools! Emerson, in his great essay on history, says that adequately to appreciate history, one must really become, as far as possible, the character one is endeavouring to understand, even to the

temporary exclusion of one's own personality, and what a valuable asset such an attitude toward the past affords to the standardising of one's own character! For are we not all prone to compare by assuming ourselves to be of normal standard, and how many among us are really normal unless submitted to the pruning which such a self-comparison with the great souls of the past affords? No history is vital which fails to penetrate the spirit and personality of the character which it is sought to appreciate and no one, not so gifted, can hope to convey such appreciation to others. What an enormous responsibility therefore rests upon those to whom is committed the office of handing on to succeeding generations the great traditions of all that is most beautiful and great in our Island story!

Would that I had the capacity and power of expression for doing justice to the spirit of Canterbury, for it is no prosy story, but aflame with wonderment, adventure and self sacrifice. In commenting upon this faculty, Dr. Dale, one of Birmingham's greatest citizens, writes, chiefly concerning literature, but equally applicable to history:—

"To live with a man who has *lived* with the immortals, who has advanced from youth to manhood in such converse with their spirits that intimacy and affection deepening year by year have turned the dead names into living friends; to catch from him the same ardour of admiration and passion of delight is a rare felicity, a life-long blessing."

The literary and historical senses are none too common among the members of our profession, and while the writer appreciates to the full all that science has to offer in furthering the advancement of our calling, surely the truly animating spirit of science, with its inseparable ideal, should by no means be neglected, or there is a danger of extreme limitation through clipping the wings of idealism. The cultivation of these senses would be a powerful asset in the advancement of our social position as a profession and of priceless value to the individual possessor.

An apology is due to the reader for the length of the prologue, but, without the spirit that the writer has lamely endeavoured to describe, the vital appreciation of such shrines of English character is never caught.

The greatness of Canterbury largely centres around the apparently simple incident in the life of a monk of the convent of St. Andrew on the Cœlean Hill—one of the seven hills upon which Rome stands—who, during a walk through Hadrian's Forum, chanced upon a group of beautiful fair-haired, blue-eyed Saxon children there exposed for sale as slaves. Being struck by their appearance he enquired of their nationality and was told that they were "Angliæ," whereupon he exclaimed that they had the forms of "Angelæ" and ought to be fellow-heirs with the angels in heaven. On being informed that their province was Deiva, he said, punning upon the word, that they should be removed from the displeasure of God. Their king it was said was Ella, and struck by the similarity of the name to "Allel" which in the Hebrew signifies praise, he exclaimed that their land should yet resound with Allelujahs or praises to God—Jah in the Hebrew meaning God.

Not long after this incident, Gregory, with a little band of followers, set out on a Christian mission to England, but so great was the popular outcry against his leaving Rome, for this good man was extremely popular as a Christian leader and teacher, that after a three days' journey northwards, he was peremptorily recalled and shortly afterwards made Pope, but he never lost sight of his original intention, and in 597 A.D. sent St. Augustine with his companions to re-Christianise our country.

Our original Christianity was Romano-British, and was brought by Christians among our Roman conquerors, although there is good evidence for its existence in even earlier times than these, as all will recognise who are familiar with the great traditions of Glastonbury, but the first really great Christian mission to England was Celtic in its origin, and came to us from Ireland as a result of St. Patrick's mission to that country, through St. Columba, in Iona.

Those members who visited the parish church at Folkestone would have seen the large and very fine western frescoes, which depict not only St. Augustine's interview with Ethelbert, King of Kent, but also his meeting with the Celtic bishops on the banks of the Severn. Bertha, the queen of Ethelbert, was a daughter of the King of Paris, and a Christian prior to her marriage, and to herself the Gallic bishop Luidhard who accompanied her, and her Christian attendants, the King allotted the little church of St. Martin's, a Romano-British church already existing in Canterbury, as a place of worship, for he was a wise and tolerant man, and placed no obstacle in the way of his wife's Christianity which was no doubt of great assistance to St. Augustine's introduction.

This little church still stands on St. Martin's Hill, above the city, and has been a place of Christian worship nearly continuously for close upon fifteen centuries.

The writer paid a special visit to this and the Cathedral library on the Friday of Congress week and saw for himself the unmistakable Roman materials used in the building of the structure, a Roman door *in situ*, and with part of the original Roman mosaic on its chancel-floor.

Between St. Martin's and the Cathedral on the hill side are the scanty ruins of the old Church of St. Pancras which was erected in St. Augustine's time. The monastery on the Cœlean Hill, from which he came, had belonged to the family of St. Pancras, a noble Roman boy who at fourteen years of age suffered Christian martyrdom during the Diocletian persecution and thus became the Children's Saint. This dedication was, no doubt, chosen as a memorial to the Saxon children, whose presence in the Roman Forum stimulated St. Gregory's project, and so King Ethelbert and his household were converted to Christianity, and on the following Christmas day ten thousand of his people were baptised.

I fear I have already exceeded my space and have not told a tithe of Canterbury's absorbing story. I have not even mentioned either Thomas à Becket or the Black Prince, but to those really interested and who desire its completion I would recommend "Stanley's Memorials of Canterbury"* in which fairly complete details are available and to which I am indebted for much of my matter, for I fear that our Editorial Committee would not sanction a continuance of the narrative in such detail as would really interest the average reader.

* Published in the "Everyman" series. J. and M. Dent. 2s.

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VICTORIA VETERINARY BENEVOLENT GOLF TOURNAMENT

The final stage for the "Simpson" Trophy was played off at Folkestone on August 11th. There were thirteen competitors and the Trophy was won by Mr. W. S. Gordon, of Edinburgh, with a nett score of 70. The Trophy is retained for one year and Mr. Gordon also received the Silver Medal presented by Dr. Bradley.

The runner-up, who received a silver spoon, was Mr. W. L. Torrance, of Nottingham, with a nett score of 71.

The Competition was played off under ideal conditions and considering the fact that this was the first year the competition was held, a satisfactory entry was received both for the divisional and final stages. The largest number of entries was received from the Scottish Metropolitan V.M.S. due to the energy and enthusiasm of Mr. J. N. Ritchie, the Hon. Secretary of that Division. The winner of the Trophy was one of the representatives of this Division. It is hoped that other Divisions will be more fully represented next year in the Competition.

The prizes were presented by Mrs. P. J. Simpson during the interval at the Benevolent dance and the Secretary of the Golf Committee, in asking Mrs. Simpson to present the prizes, was able to announce that the sum of £10 15s. had been collected for the Benevolent Fund as a result of the Competition. Appreciation was also expressed of the generosity of the President and Dr. Bradley in presenting the Trophy and Medal annually for competition.

A competition is to be arranged at the next Congress for the ladies. Mrs. G. W. Dunkin has kindly offered a cup and a prize will be given by Mrs. R. Simpson for the best scratch score. The entry money from the ladies' competition will also be devoted to the Benevolent Fund.

R. Simpson,
Secretary, Golf Committee.

LADIES' VETERINARY BENEVOLENT GUILD

FIRST ANNUAL GENERAL MEETING

Inasmuch as considerably more importance attaches to the first than to subsequent Annual General Meetings of an organisation, as an index of stability and progress, it is most gratifying to be able to record that the general success of the profession's "Folkestone Week" applied in full measure to the above meeting, which was held at the Town Hall, Folkestone, on the morning of Thursday, August 11th, 1932.

Mrs. P. J. Simpson (President of the Guild) occupied the chair, and approximately fifty members were present, thereby amply justifying the decision, which was repeated on this occasion, to hold the gathering in association with the National Congress.

The minutes of the inaugural meeting held on February 11th, 1932, were taken as read and were approved, as were the draft rules of the guild, which were suggested at the earlier assembly.

The correspondence consisted of a number of apologies for absence, and of a letter of resignation, from the position of Hon. Secretary, of Mrs. Jurgensen, owing to the pressure of other duties. Mrs. Jurgensen's resignation was accepted with much regret, and it was decided that the official to be elected in her stead should send an expression of this sentiment and of the members' keen appreciation of Mrs. Jurgensen's services.

ELECTION OF OFFICERS

The following officers were elected for the ensuing year:—

President.—Mrs. P. J. Simpson was re-elected, on the proposition of Mrs. Male, seconded by Lady Moore.

Vice-Presidents.—On the proposition of Mrs. Simpson, seconded by Mrs. Buxton, the Vice-Presidents were re-elected *en bloc* as follows:—Mrs. Male, Mrs. Wooldridge, Mrs. Brittlebank, Mrs. MacGregor, Mrs. H. C. I. Kelly, Mrs. Dolan.

Hon. Treasurer.—Mrs. F. W. Willett (re-elected).

Hon. General Secretary.—Miss Sheather, of "Wroxton," Chorley Wood, Herts., was elected to this office in succession to Mrs. Jurgensen, on the proposition of Mrs. Wooldridge, seconded by the President.

Auditor.—Major-General Sir John Moore.

Council.—The following were elected (officers of the Guild being members of Council *ex-officio*):—

Representing the North of England, Mrs. J. W. Rider; South of England, Mrs. Dunn; London, Mrs. Herbert King; Midlands, Mrs. Conchie; East of England, Mrs. Buxton; Wales, Mrs. Montgomerie, or, in the event of her non-acceptance, Mrs. Wynn Lloyd; Scotland, Mrs. Begg; Irish Free State, Mrs. Craig; Northern Ireland, Mrs. W. J. Rice.

Reports from the Secretary and Hon. Treasurer.—These reports, together with a statement of accounts to June 25th, were accepted and adopted, and it was decided that the month of June should mark the termination of the financial year.

Donation to the Victoria Veterinary Benevolent Fund.—In pursuance of the primary object of the Guild, the affording of financial support to the Victoria Veterinary Benevolent Fund, the meeting proceeded to the passing of a monetary resolution with this end in view. It was with considerable gratification that at this early stage in its career the Guild found itself in a position to vote a donation of £25 out of the General Fund.

Place of Next Annual General Meeting.—The members unanimously agreed upon Llandudno as the place at which the next Annual General Meeting of the Guild should be held, the time to be during the N.V.M.A. Congress Week.

It was decided that meetings of the Council of the Guild should be held quarterly at various centres; also that the different membership areas should hold their own meetings, as distinct from meetings of the Council: meetings of membership areas to be called by Area Vice-President.

Collecting Boxes.—The purchase of a number of collecting boxes was decided upon; a donation of £1 for this purpose being made by Mrs. Trewin. The meeting also agreed to a proposal for the collection of cast-off clothing, etc., the Hon. Secretary kindly undertaking to make her residence the centre for receipt of articles for the remainder of the year, following which a similar service, proffered by the President, was accepted with thanks.

New Members.—At the conclusion of the business on the agenda nine new members were enrolled, bringing the total membership up to the highly-encouraging figure of 182. It was realised, however, not only that the infant Guild had made satisfactory growth, but that it is yet far from fully grown, and much enthusiasm was evinced at the meeting for an expansion of the membership and work of the organisation and, in particular, for its *raison d'être*—the adequate assistance of all associated with the profession who are in need. Many proposals to that end, and for the better running of the Guild, were made during the course of the proceedings, particular attention being paid to the question of the formation of new areas and divisions.

Kitty Sheather, *Hon. General Secretary.*

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THE "VICTORIA BENEVOLENT" DANCE

The opportunity of combining enjoyment with support for the Victoria Veterinary Benevolent Fund was taken by the great majority of those present at Congress, and the Ball Room of the Grand Hotel on the evening of August 11th presented an animated spectacle that must have gladdened the hearts of the President and Mrs. Simpson, and the many others to whom the welfare of the Fund is ever a matter of moment, and not infrequently of considerable anxiety. Needless to say, under these circumstances the Dance was a brilliant success, and it is gratifying to record that, as a result, the handsome sum of between £50 and £60 will pass to the Treasurer of the profession's own charity. The number present was 233, the dance being open to residents of the hotel, while many people from the outlying district—some from as far away as Canterbury—attended the function.

The event was indeed a triumph for the organisers—Mrs. Wooldridge having the co-operation of Mrs. Simpson and Mrs. Male, Officers of the Ladies' Benevolent Guild, of which Miss Sheather (Chorley Wood) is Hon. General Secretary. Each gave two prizes, and during the evening these were presented to the winners of "spot" dances and holders of "lucky number" tickets.

As recorded elsewhere, a pleasing feature of the evening was the presentation, by Mrs. Simpson, of the prizes won in connection with the Golf Tournament, which was held with the same object, and loud applause greeted the announcement that £10 15s. had been yielded by the Competition.

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No account of the social side of Congress would be complete without reference to the degree to which the enjoyment of many was enhanced by the action of the Folkestone Golf Club in granting facilities for members to play over their splendid course during the week, and for making arrangements for the Golf Tournament; also by the kindness of Messrs. Pratt and

Operations Day

Demonstrations of Surgical Technique

Very properly, the interests of the practitioner were kept well to the fore in the proceedings of Congress, and Thursday morning saw him come into his own exclusively, when small animal operations, which were made the occasion for the demonstration of surgical technique in its most modern aspects, formed at once a most attractive programme and a comment on the changing conditions of practice.

The theatre provided—a commodious adjunct to the Woodward Hall where the Exhibition of surgical appliances was appropriately housed—served its purpose admirably from the points of view both of operator and onlooker; indeed, the arrangements made have never been bettered, and reflected great credit on Captain F. C. Gillard and Messrs. Arnold and Sons, who were responsible for them.

For our part, we are much indebted to Captain Gillard and his fellow demonstrators for the following notes concerning their work, the skilful performance of which, with particular reference to the securing and maintenance of the greatest possible measure of asepsis, kept a "full house" absorbed throughout a most successful surgical session.

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Captain Gillard's Demonstration

Captain F. C. Gillard, M.R.C.V.S. (Folkestone), writes:—

"At the time of the demonstration, owing to an acute attack of laryngitis, I was unable to explain the technique to the members present, and the Editorial Representative of the *Record* has asked me to give same for publication.

"To comply with the invitation by the Committee of the N.V.M.A. to give a demonstration on operative technique in the small animal I chose the operation of hystero-oophorectomy by median section in the cat as being a suitable subject for this purpose.

"The preparation of the patient, *viz.*, shaving the site of operation and painting the part with tincture of iodine, sterilising instruments, operation cloths, swabs, gowns, rubber gloves, etc., was carried out in accordance with my usual routine by my assistant, Miss Dijon, just prior to the appointed time. My instruments were sterilised by boiling, and gowns, gloves, operating cloths and swabs, etc., were submitted to a pressure of 15 pounds per square inch for 15 minutes in a dry steriliser. Whilst the patient was being anæsthetised by æther, subsequent to having been given 1/200th gr. of atropin to prevent salivation, I washed my hands with Messrs. Parke, Davis and Co.'s "Neko" soap and rinsed in running hot water from the geyser and then well rubbed in industrial methylated spirit, dried with a sterilised towel before putting on my rubber gloves and gown. My assistant carried out the same precautions.

"The glass top table had been washed with antiseptic solution, then industrial methylated spirit, and was covered by a dry sterilised cloth before the instruments and cloths were placed thereon. Tincture of iodine was again applied to the seat of operation. I then covered the patient with a sterilised cloth which had an opening in the centre, a median incision was made through the skin and a sterilised cloth attached to either edge by means of towel clips. An incision was then made along the course of the linea alba, the abdominal cavity penetrated, and by means of scissors the peritoneum cut throughout the entire length of the incision. My rule is to make a good long incision; in this case it was a little longer, to enable members to get a better view. Any vessels, excepting capillaries, were ligatured or had forceps applied to them at once. The left uterine horn and ovary was then sought, and artery forceps applied to the utero-ovarian vessels and duly ligatured with 00 chromic catgut before severing, along with the membraneous attachments of the ovary, by scissors. The same procedure was then adopted with the right ovary, and a double ligature, about three-quarters of an inch apart, of No. 1 size chromic catgut (10 day) firmly applied to the body of the uterus and severed by scissors, allowing the ovaries and uterus to be removed intact. The omentum was carefully replaced and any small clots removed with a gauze swab. The muscular wall, including the peritoneum, was then closed by a continuous suture of No. 1 chromic catgut, great care being taken to bring together the opposing edges of the peritoneum. The two operating cloths were removed by releasing the towel clips and the edges of the skin closed by a continuous suture of silkworm gut, an iodised piece of cotton-wool applied to the wound and a sterile cloth, with holes for the legs of the patient, put on and a supporting bandage to keep the dressings in position.

"In large, or heavy, or fat patients I usually insert three or four interrupted catgut sutures

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Co. for allowing members to attend the Race Meeting at a reduced charge. Even more general is the indebtedness of Congress to the municipal authorities of Folkestone for the privilege of admission to the magnificent Leas Cliff Hall on presentation of the Congress Badge—a facility of which advantage was frequently taken by many delegates, who found in the hall not only a centre for the enjoyment of excellent music, but a cool retreat or rendezvous.

XUM

as a precaution against the breaking of my continuous catgut suture, but this was unnecessary in my small patient.

"During the whole time the patient was on the operating table (made to my own design) it was kept warm by means of electric lamps placed under a metal tank which, in the absence of electric current, can be filled with hot water.

"Since writing these notes, Mr. Gerald Wacher, M.R.C.V.S., whose patient it was I operated upon, has reported that the wound has been dry throughout, and apparently healed by first intention. The skin suture has been removed and the patient has made an uneventful recovery.

"I would like to take this opportunity of thanking Messrs. Arnold and Sons for their generous help in fitting up the improvised operating room with the necessary fitments, and allowing demonstrators to use the steam sterilisers and other surgical appliances, and to express my thanks to Professor Mitchell and his assistants who kindly acted as anæsthetists, and rendered me other help."

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Professor Mitchell's Contribution

The contribution to the morning's programme made by Professor W. M. Mitchell, M.B., Ch.B., B.Sc., M.R.C.V.S., Edinburgh, was centred upon an operation for bilateral inguinal hernia in a small Pekingese bitch, but the object he had in view was not so much the particular operation as a demonstration of operative technique which, while reducing the risks of infection and thus preventing unnecessary suffering to the patient, permits a busy practitioner to be prepared for an operation at very short notice.

These ends he showed to be attainable by following a technique based upon the use of a steam steriliser for sterilising cloths to surround the field of operation, gowns to be worn by the operator and his assistant, and gauze, for swabbing during an operation, all of which can be prepared beforehand and kept ready for use in Schimmelbusch drums. In this way cloths, gowns and dressings are left dry as well as sterile. All metal instruments were boiled, except cutting instruments and needles, which are kept when not in use in full strength lysol in shallow covered dishes and are simply rinsed in boiled water prior to use.

The suture material chiefly employed is also stored ready for immediate use:—

(*a*) Silkworm gut for skin sutures in 1 per cent. carbolic acid after boiling;

(*b*) catgut, either plain or chromic, in 1 per cent. iodine solution, this being used for all buried sutures and ligatures.

Hands of Operator and Assistant.—Gloves were not worn, but thorough disinfection of the hands and arms was carried out in three stages:—

(*a*) Washing with 1 per cent. mercuric iodide soap at running water five to ten minutes;

(*b*) washing with the same soap in a basin containing a weak lysol solution, using a sterilised nail brush. Nail brushes, after boiling, are kept ready for use in a jar containing 2½ per cent. lysol;

(*c*) rinsing the hands in a weak mercuric iodide solution, which removes the slippery feeling left after using soapy solutions, further disinfecting the hands.

From time to time during the operation the hands were rinsed in the antiseptic solutions.

The operator and his assistant at this stage donned sterile operating gowns and caps.

Instruments, after sterilisation by boiling, were arranged on a sterile holland cloth laid on a glass-topped instrument table which had previously been painted with liquid carbolic acid.

Preparation of Patient.—The ventral aspect of the abdomen and inside of both thighs were shaved and the skin cleansed with spirit the day before operation.

Only milk was given the night before operation and nothing on the morning of operation.

Anæsthesia.—Half-an-hour before operation morphine sulphate gr. ¼ was given subcutaneously and throughout the operation general anæsthesia was maintained with a chloroform æther mixture (2 chloroform, 3 æther), using a modified Junker's apparatus with a hand bellows and a small tin funnel as a delivery mask.

After the dog was under the effects of the anæsthetic she was placed on the operating table and secured in the usual way.

Preparation of Field of Operation.—The dry skin was painted with 2½ per cent. tinct. iodi. and four small calico cloths arranged around the small hernia on the right side, leaving only a small quadrilateral of skin exposed. Towel clips secured these cloths to the skin. Two large holland cloths were now laid around this area, giving a wide sterile surface extending beyond the edges of the table on which instruments, swabs, sutures, etc., could safely be laid during the operation.

Finally, before incising the skin the exposed area was again painted with tinct. iodi.

Operation.—An oblique incision was made through the skin parallel with the groin over the hernial swelling.

By blunt dissection the sac was exposed in the midst of a considerable quantity of fat and

the neck of the sac was cleared by gauze dissection. The sac was opened and the attachment of the round ligament of the uterus to the distal part severed with scissors and the freed ligament and peritoneal fold attached to it pushed back into the abdominal cavity.

The sac was then twisted up, a modified Staffordshire knot of catgut tied round the neck, and the redundant part of the sac removed. On the right side the stump was buried in the inguinal canal by approximating the two lips of the subcutaneous abdominal ring with a catgut suture.

The skin incision was completely closed by a series of interrupted silkworm gut sutures.

The hernia on the left side was smaller than that on the right and was treated in practically the same way.

Finally, after painting the lines of the incisions with tinct. iodi, a large sterile gauze swab was placed so as to cover both wounds, covered with cotton-wool, and a figure-eight bandage applied to maintain the dressings in position.

Acknowledgments.—To Messrs. Arnold and Sons the operator wishes to express his deep indebtedness for the great trouble taken to make the theatre so complete in aseptic furniture, sterilisers and other equipment.

Without the co-operation of Captain Gillard the arrangement of a small animal surgical theatre would have been very difficult.

To these and all who assisted him in any way Professor Mitchell tenders his best thanks.

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Operations by Dr. McCunn

Two operations were performed by Professor J. McCunn, M.R.C.V.S., M.R.C.S., L.R.C.P. (London).

The subject of the first operation was a ten-months-old cross-bred terrier dog.

The history of the case was that for three weeks there had been a lump in the right inguinal region. This lump had gradually become hard. The diagnosis was not clear. All precautions were taken as if the lump was the result of a hernia or torsion of the testicle. On incision a stream of stinking pus was evacuated from an enlarged inguinal gland. The area was cleaned and drainage provided.

In the second case an exploratory laparotomy was performed, all other attempts to reach a diagnosis having failed. Professor McCunn demonstrated his methods of opening and closing the abdomen. The case had been under treatment for "acute abdomen" and at the laparotomy the cause of the condition was found to be an acute localised enteritis in the upper part of the small intestine.

Demonstration of the Double Intradermal Tuberculin Test

At the request of many practitioners, the Provisional Committee decided to include a demonstration of the double intradermal test in the programme of the proceedings. The great interest which was evinced in the test bore ample testimony to the wisdom of the Committee in their choice.

A small, previously untested, herd was selected by Captain F. C. Gillard, M.R.C.V.S., who was kindly responsible for the preliminary arrangements, while the actual test was undertaken by Mr. R. E. Glover, B.Sc., M.R.C.V.S., Institute of Animal Pathology, Cambridge. Three visits were paid to the herd in order to enable those attending the Congress to follow each stage of the method. On the first day, the technique of the inoculations was explained, after which 16 animals received a sensitising dose of tuberculin. On the third day, the cattle were examined and the nature of the reactions was discussed. All the animals, with the exception of six which presented swellings of a positive nature, were then reinoculated with tuberculin. The final readings were taken on the fourth day and the results, as recorded by Mr. Glover, are set out below:—

No. of Cow.	Initial Measurem't.	Measurements. 48 hour.	Remarks.	Measurements. 72 hour.	Remarks.	Result.
	m.m.					
			D.			
1	8	18	N.S.I.	21	D.	R.
2	7	10	—	15	S.D.	R.
3	8	10	—	10	—	N.
			S.D.			
4	8	15	N.S.I.	17	D.	R.
5	7	10	—	12	—	N.
6	9	11	—	14	S.D.	R.
7	7	10	—	11	—	N.
			D.			
8	8	20	N.S.I.	20	D.	R.
9	8	10	—	20	D.	R.
10	8	10	—	18	D.	R.
11	7	9	—	11	S.D.	R.
12	7	10	—	19	D.	R.
			D.			
13	9	17	N.S.I.	23	D.	R.
14	6	9	—	15	D.	R.
			D.			
15	8	22	N.S.I.	35	D.	R.
			D.			
16	7	16	N.S.I.	18	D.	R.

D. = diffuse.
S.D. = slightly diffuse.
N.S.I. = no second injection.
R. = reactor.
N. = non-reactor.

The cattle were inspected and the characteristic features of the different types of swellings were discussed. While agreeing in the main with these findings, many of the members expressed the opinion that cows 6 and 11 ought to have been classified as negative animals.

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X-Ray Apparatus Demonstration

Demonstrations of the use of their X-ray apparatus were made throughout the week by Messrs. Philips Metalix (Philips Lamps, Ltd.) and created much interest. A full description of demonstration and apparatus will be found on page 1032.

Blood Sampling for *BRUCELLA* Agglutination

PRELIMINARY REPORT

A very satisfactory response was made by veterinarians attending Congress to the appeal made by Professor G. S. Wilson, through the medium of the *Veterinary Record* of August 6th, for volunteers to assist him in his *Brucella abortus* or *melitensis* antibody enquiry by affording him the opportunity of examining their blood serum.

Professor Wilson sends us the following preliminary report:—

"Blood from 98 veterinarians was collected at Folkestone; of these, 63 were exposed to contact with aborting animals, while 35 had no such contact. In the first group of 63 members, the blood serum of no fewer than 15 agglutinated *Br. abortus* or *Br. melitensis* to a titre of 1/20 or higher, the highest titre being 1/220. In the second group of 35 members only one positive result was obtained, a titre of 1/40 being given by the serum of a laboratory worker who was constantly handling living cultures of Brucella and making agglutination tests with bovine sera. Before the experiment is complete it is hoped to obtain the serum of a few more veterinarians and to increase the numbers in the non-exposed group by serum taken from control persons. Full results will be sent in the early autumn to the *Veterinary Record*."

There was considerable discussion on the subject of "unsafe" milk at a recent meeting of the Bristol Health Committee, following a report by the medical officer that 610 cans of milk in Bristol had been found to contain tuberculosis bacilli. The chairman of the committee remarked that pasteurisation was considered by many to lead to carelessness; moreover, pasteurisation, which covered a multitude of sins, destroyed essential vitamins. The ideal was raw milk free from harmful germs.

"WHAT THE VETERINARY PROFESSION IS DOING FOR YOUR ANIMALS"

Sir John Moore's Congress Popular Lecture

FILM DEMONSTRATION BY PRINCIPAL HOBDAY

There was an excellent attendance, with a highly-satisfactory proportion of the general public, at this lecture by Major-General Sir John Moore and subsequent demonstration by Principal F. T. G. Hobday, which were given at the Town Hall, Folkestone, on the evening of Tuesday, August 9th, with the Mayor (Ald. J. W. Stainer) in the chair.

The MAYOR OF FOLKESTONE, in introducing the lecturer, said that he felt it a great privilege, in his capacity as Mayor, to have been invited to preside on that occasion. He must tell them candidly that when he came into the hall he feared that on such a beautiful summer evening there was not likely to be a very good attendance, and he was very pleased to find that his prediction was not fulfilled. (Applause.) He presumed that it was the magnetism of the name of Sir John Moore that had brought them there. (Hear, hear.)

He was gratified to think that the Veterinary Congress thought it wise to hold a popular lecture in association with their Congress. He was convinced that the people only had to know more to appreciate veterinary science to a very much greater degree than they did at present. He thought they were beginning to appreciate it and that it was up to the public to appreciate it still higher. In his view, if the public only knew what the value of the veterinary profession was to the community at large, not only so far as the lives of animals were concerned, but through the benefits it brought, by reflection, on medical science, which dealt with the diseases of man, then they would rate its invaluable services much more highly, and, in doing so, would realise of what tremendous importance it was to the economic side of our communal life and to the food supply.

He thought that the members of the profession themselves realised that their profession had made great strides in recent years. It was a matter of astonishment to anyone who realised the difficulties with which the profession had to contend, that the veterinary colleges were able to maintain so high a standard of efficiency in tuition. (Hear, hear.)

There was perhaps another reason why he was pleased to be in that position, in that not long since he had a letter which was addressed to him in a manner which associated him, by implication, with the good which veterinary medicine conferred: he was, in fact, addressed as the "Mare." (Loud laughter.)

He would ask Sir John Moore to deliver his lecture. (Applause.)

Major-General Sir John Moore, k.c.m.g., c.b., f.r.c.v.s., who was most cordially received, said:—

The Members of the National Veterinary Medical Association assembled at Folkestone for their 50th Annual Conference, appreciate very highly the interest which His Worship the Mayor and Corporation are taking in us as veterinary practitioners; and, speaking for myself, I feel greatly honoured at you, sir, having consented to take the chair for the address which I have been asked to give. The subject of my remarks has been billed as "What the Veterinary Profession is doing for your animals." I do not in any way quarrel with the title, as I hope to show in very simple form, and without much scientific detail, the great work which the Veterinary Profession is accomplishing, and, given that due support from those in authority, and the necessary goodwill and appreciation of the public, the path of progress to the goal of efficiency cannot be otherwise than assured.

But were I to consult my own feelings, being an old veterinarian of some forty-seven years' standing, I should say that the brightness of the present veterinary picture, and the roseate hue of hope for the future, should in a measure reflect a little colouring on the old order of days gone by. The great projects of men and matter usually have had small beginnings: "mony a mickle mak a muckle," and so it is with the science of medicine, both human and animal—the empirical smallness of centuries and generations ago has grown into real scientific method and merit, creditable to the professions concerned, and of inestimable boon to human beings and animals alike.

In the study of disease and ailment, and of rational treatment and prevention of the same, one always has to remember that human ailment in the main has its counterpart in animals, and that very often, and in particular instances, there are diseases of animals which are both directly and indirectly communicable to man and *vice versa*. In the wide domain of medicine, and in the great field of surgical procedure, it becomes evident, therefore, that the training of the veterinary man or woman should approximate that of the medical man or woman on general principles, the aim of the science of medicine being the reduction of the incidence of disease and inefficiency, and of human and animal suffering, with that exactitude and precision which only scientific means can achieve. This is the guiding spirit of the Royal College of Veterinary Surgeons (the Governing Body of the Veterinary Profession) and the principle which animates all our teaching institutions.

The Veterinary Profession as such is really not a very old one. Though the first Veterinary College (*viz.*, the Royal Veterinary College, London) was founded in this country in 1791, and subsequently the Royal (Dick) Veterinary College, Edinburgh, in 1823, the Glasgow Veterinary College in 1862, the New Veterinary College, Edinburgh, in 1859 (afterwards becoming the Liverpool School of Veterinary Medicine in 1904) and the Royal Veterinary College, Dublin, in 1900, it was not until the year 1844 that a Royal Charter was obtained. This had as its objects the recognition of the Veterinary Art as a Profession and the creation of a body politic and corporate under the title of "The Royal College of Veterinary Surgeons" for the purpose of initiating training for a prescribed period and the granting of diplomas or licences solely and exclusively to practice as veterinary surgeons at the expiration of that period, and contingent on passing what are termed professional examinations under a carefully conceived and progressively arranged syllabus of instruction year by year. On the granting of the Charter in 1844, provision was made for a total of two years' study. About the year 1876 this was increased to three years. In 1895 the curriculum was further increased to four years. In recent years, however, applied veterinary science has become so intense and important, and the subjects entering into the training of a veterinary surgeon so comprehensive and complex that the Royal College of Veterinary Surgeons has wisely decided to expand the curriculum by one more year.

Commencing in October, 1932, the minimum period of training considered necessary for the qualification of a veterinary surgeon is five years. Medical and veterinary graduates are therefore on the same level as regards the period of training, but with this difference, that whereas the attention of the medical graduate is directed to the human species, the veterinarian is concerned with a plurality of animals, which makes his task the more difficult. It is quite right, too, that the animal-loving community, and particularly perhaps those engaged in the livestock side of our agricultural industry, should expect of the veterinary surgeon the highest degree of scientific and practical education which alone can counter all the incidence of animal disease and the loss resulting therefrom. Under the five years' curriculum of training there is no question that this will be effected.

Moreover, as the tendency of the present age of education is to affiliate Veterinary Colleges to Universities, degrees in Veterinary Science (B.V.Sc.) in the case of University matriculation can be and are indeed obtainable, arrangements being made for the teaching and examinations under the University curriculum to run

concurrently with those for the diploma conferred by the Royal College of Veterinary Surgeons. University degrees are intended to make a veterinary graduate a more valuable professional asset but not to militate against the one portal system of entry into the Veterinary Profession, or licence to practise, as laid down by Royal Charter.

I have thought it necessary to preface my address with these few brief remarks on training just to show what is now demanded or expected of a fully-qualified veterinary surgeon. And, be it marked, his education is by no means completed on his obtaining his diploma or licence to practise. His whole life is one great education; moreover, there are matters of applied research and post-graduate training which claim the attention of many, making for the uplift of professional scientific status.

However, before blowing the horn of present endeavour, let me for a few moments recount the achievements of the past in the elimination of animal disease and in the mitigation and avoidance of suffering, or in other words what stands to the credit side of the veterinary ledger of the country.

In 1865, the year after I was born, Great Britain had a very serious visitation of that highly contagious and rapidly fatal disease termed cattle plague or rinderpest. It was introduced by cattle landed at Hull from Russia. Of 73,549 animals attacked, case mortality ran up to 55,422, and an Order in Council was issued making it compulsory to slaughter and bury all animals affected with the plague as well as those which had been in contact with them. Thus began the stamping-out policy which is adopted in this country on the occurrence of highly-infective animal disease. Certain legislative restrictions were also imposed on cattle traffic, which, if they had been removed, would have laid the country again open to a severe visitation in 1872 from cattle shipped from Russia to Deptford, Hull and Leith. As a profession we are bound to pay a tribute of profound respect to the memory of Professor John Gamgee, an eminent pioneer of public veterinary service in those days. As far back as 1857 he had warned the Government of the probabilities of invasion, and his sage counsel, with that of Professors Simonds, Brown, Pritchard, and others of our profession, tolled the knell of cattle plague so far as this country is concerned. It prevails most seriously, however, in India, the loss in cattle and buffaloes from rinderpest alone approximating a quarter of a million animals annually. As the policy of stamping out by slaughter is impracticable in that country, prevention by inoculation is the order of the day. The serum of the blood of hyper-immunized animals in specially regulated doses, and a small amount of virulent blood, when injected hyperdermically simultaneously, has the power of conferring durable or lasting immunity. It is greatly to the credit of both the Civil and Army Veterinary Departments of India that so formidable a disease situation can be thus brought into effective control, and it is reasonable to suppose that through research and with improved methods of technique such control will be rendered even more perfect in course of time. Passage of the virus through that very useful and relatively inexpensive animal, the goat, seems to open up a hopeful line of preventive treatment.

Certain other serious contagious diseases of animals requiring legislative action and the vigilance of the Veterinary Profession, and which continue to be scheduled under the Diseases of Animals Acts, 1894 to 1927, have been entirely eradicated.

Bovine contagious pleuro-pneumonia, which was a veritable scourge to the agriculturalist and dairy farmer, disappeared from our midst in the year 1898, though it still exists in Australia, parts of Africa and in Asia.

Rabies in dogs, which was a constant danger to human beings and to other animals half a century ago, happily succumbed to stern repressive measures, and Great Britain has been free from this dreadful disease since 1902, excepting on one occasion after the Great War when dogs were smuggled into the country by aeroplane without undergoing the prescribed period of quarantine. But while it prevailed, it usually fell to the lot of the veterinary surgeon to carry out the destruction of the dog after diagnosis of the disease. My usual procedure as a young practitioner was to present a pledget of cotton wool soaked with Scheele's prussic acid on the end of a stick to the rabid dog over the half door of a loose box. Snatching the pledget in his mouth, the prussic acid soon produced coma, permitting me to pour more of the fluid into his mouth and so complete destruction. How much simpler, in these days of electricity, the electrolethaler as used for the stunning of small animals before slaughter, would have been. However, it is quite certain that with an enforced quarantine of dogs landed in Great Britain from countries where the disease is known to exist, and under expert veterinary supervision for the prescribed time which covers any probable duration of incubation, the country will be saved from further visitations and the burden of harsh and inconvenient measures of control such as the Muzzling Order.

Another old-time disease very prevalent in cab stables, coaching stables, in studs of commercial horses, and in the Army, was glanders, in all stages from the acute to chronic, causing considerable loss and occasionally deaths in human beings from accidental inoculation. No army could ever take the field in any theatre of

war without encountering it in serious form, the debilitating circumstances of war lending zest to its ravages. It was the old Napoleon of the Army Veterinary Services. Thank goodness it is now non-existent, having been completely exterminated by a diagnostic agent termed mallein, a product of the causative organism of the disease, the *Bacillus mallei*, and which has the property, by a specific reaction, of determining whether an animal is affected or not long before it becomes a danger. With the expenditure of approximately one million and a half doses of mallein, the Expeditionary Force in France was assured freedom from the disease. A few reactions amongst animals evacuated from the front line in the autumn of 1915 indicated a certain menace, and it was decided to test the whole Force. Three hundred thousand horses and mules were subjected to the mallein test during the following winter and the disease cleared out. We were again threatened on the arrival of the Portuguese Force in the spring of 1917, and by a few cases of reaction on the return of a division from Italy, but little trouble was occasioned. There were 85 reactions in 1917 and 36 reactions in 1918. Thus has an old enemy been defeated by scientific procedure, and the elimination of that old Napoleon of disease by the young Staff College graduate, Mallein, stands greatly to the credit of a progressive Veterinary Profession and of which our country and Empire has every reason to be proud for a notable riddance of an ugly disease. (Hear, hear.)

So much for past achievements in a few instances, but there are still other Bolsheviks of disease that, like the poor, are always with us, and claim our attention and counter-attack. I have no hesitation in saying that many of them will in course of time meet their nemesis at able hands and with the appropriate weapons.

Proficiency in the control of disease implies first of all a profound knowledge of cause, for without this our labours are in vain and our efforts misdirected. And having defined the cause with an exactitude which is an indispensable factor, preventable and remedial measures become scientifically possible. Indeed, the first plank on the platform of disease is cause; remove the cause and the effects cease. It is like crime in this respect. However, a very determined campaign is being launched against animal disease in general which it is safe to say will be of inestimable benefit to our agricultural and livestock industry, and at the same time reflect in various directions a better level of public health in our human community, an object most desirable in itself.

A little over a year ago there was set up by Royal Charter an Agricultural Research Council for the organisation and development of research in all matters incidental to Agriculture in a comprehensive sense. Two important committees under this Council are the Animal Diseases Committee and the Animal Nutrition Committee, and as I am a co-opted member of the former committee, and have in consequence visited the majority of the Institutes where veterinary research is carried out, I feel that I am in a position to testify to the sterling good work our veterinary scientists are doing in the elucidation of the many problems of disease which confront animal kind. It is only through research that practical solutions to our many difficulties can be found. Our research workers are the forgers of our weapons of defence and offence against the inroads of bacterial disease and for the promotion of the appropriate preventive agency and curative remedy. Furthermore, as research and teaching must go hand in hand, it becomes a *sine qua non* that our rising generations of veterinary surgeons in their collegiate courses should reap the full benefit which scientific research provides.

I now wish for a few moments to refer to some of the diseases of animals which are engaging the attention of the veterinary profession, and to indicate in what manner steps are being taken to reduce their incidence and to effect their eradication.

First of all let me take tuberculosis, which is perhaps the most serious of all diseases, inasmuch as it is a disease affecting human beings and the majority of animals, including fowls, the danger being one of intercommunicability. The question is often asked "Can tuberculosis be eliminated?" I most positively affirm that bovine tuberculosis can be eradicated and with it that portion of tuberculosis in human beings which is of bovine origin. It is really very sad to think that 40 per cent. of cows providing milk for human consumption in this country are tuberculous, and that susceptible children should be exposed to infection from drinking milk, tuberculosis of the abdominal viscera and of bones in young children being attributable in the main to bovine sources. The raw milk supply of our cities is infected with tubercle bacilli in varying instances from 6·25 per cent. to 10 per cent., and in the last quarter of 1931 the bulked raw milk of London's supply even went up to 13 per cent., a considerable rise on 7·5 per cent. in 1929 and 9·8 per cent. in 1930. Better veterinary procedure would change all this. A Tuberculosis Order (1925) exists, under which diseased animals are presumed to be declared, but the Order does not sufficiently meet the case, inasmuch as tuberculosis being an insidious disease, harm is done before an infected animal is usually declared. The only means by which bovine tuberculosis and its serious effects on the human population can be countered is to

enforce a compulsory inspection by veterinary surgeons periodically of all dairy herds and an endorsement of the licences of milk providers accordingly. I am convinced that the first step in the limitation of tuberculosis is clinical veterinary inspection and a riddance of the tuberculous cow. If to this is added the tuberculin test in diagnosis, eradication would be assured. I have no faith whatever in either the B.C.G. or the Spahlinger methods of preventive vaccines, and I unhesitatingly say that if applied to children there will be disaster.

The National Veterinary Medical Association has a scheme on the lines I have indicated, which, if put into operation, would achieve success. It is based on suggestions originally put forward by the Scottish Branch of the Association. Scotland, in initiative and method of tackling the situation, is in advance of the rest of Great Britain. As an example I may remark that during the years 1909 to 1914 the hospitals of the City of Glasgow were supplied with milk obtained from herds under the strict supervision of the veterinary officer. The herds were not regularly tested with tuberculin, but careful examination of the animals was made periodically and any suspicious animals were at once retested with tuberculin. As a result only one sample of milk was found infected with tubercle during those five years. From 1921 to 1926 the hospitals were supplied with milk from untested herds and 3 per cent. of samples were found infected. During 1927 and 1928 the hospitals were supplied with milk from tuberculin-tested herds, and out of 550 samples tested not one was found infected. This demonstrates very clearly the value of clinical examination by veterinary surgeons and the entire freedom from infection of milk from tuberculin-tested herds. The basis of the National Veterinary Medical Association scheme is the creation of accredited herds by the tuberculin test and subsequently the formation of accredited areas.

But the value of veterinary examination of individual animals is not confined to tuberculosis. There are other diseases of serious moment to the agriculturist and dairy farmer which claim the attention of veterinary surgeons up and down the country as well as the research worker. Notable among these are mastitis and contagious abortion, both of which have a bearing on measures of public health.

Mastitis is a streptococcic infection of the udders of lactating cows. Milk is therefore liable to be contaminated with pus and other inflammatory products inducing sore throats in human beings. Much research work is being conducted at the present moment regarding this somewhat common disease.

Contagious abortion, as can be readily understood, presents a most serious problem to the livestock breeder, and its causative organism, the *Bacillus abortus*, when present in the milk of aborting cows, may give rise to a condition of undulant fever in human beings. The usual practice of veterinary surgeons when the disease is suspected is to institute the serological agglutination test, and having thereby confirmed its presence, the individual members of a herd are vaccinated by means of a living though attenuated culture of the causative organism as manufactured and issued by the Veterinary Department of the Ministry of Agriculture. A dead vaccine as a preventive is now under consideration.

Johne's disease in cattle, a chronic enteritis sometimes confused with the wasting form of tuberculosis, is largely engaging the activities of the veterinarian, and a diagnostic test by means of a substance designated Johnin is being exploited with a view to easy control and elimination.

The old disease of cows commonly called "milk fever," attributable to calcium deficiency in the blood, has been successfully met by the curative treatment of calcium gluconate injections.

We may read into all this the great desirability of taking the agriculturalist and dairy farmer into our closest confidence and co-operation. An educative influence on the part of Medical Officers of Health and veterinary surgeons should achieve a great deal. It is most necessary to maintain in the country the purest natural and raw supply of milk from healthy cows and under healthy conditions. This can only be done by securing the fullest veterinary supervision of the cows and the production of milk in all its phases. There must be a definite move for better veterinary supervision of cattle in the prevention of human disease. In the meantime, pasteurisation of milk is advisable.

A question which it is quite legitimate to ask is "What is the veterinary profession doing towards the prevention and suppression of foot-and-mouth disease other than by wholesale slaughter of animals?" I am afraid we should have to confess that little has been achieved so far, in spite of the Commission which was set up some few years ago to conduct enquiry and formulate action after experimentation. However, I am sanguine that in course of time something useful by way of the limitation of outbreaks will be evolved. The difficulty is that, like other virus diseases, the causative organism is so small that it is invisible under the highest magnification of the microscope, and it will pass through the closest grained filter in laboratory use. One feels, therefore, somewhat helpless if the actual microbic cause has not been discovered and harnessed. Besides, there are several strains of the disease, and each will not protect against the other. In the meantime there is wisdom in our present policy in regard

to outbreaks and the exclusion of introduction from sources abroad.

A very ugly disease, and 100 per cent. fatal, confronts the veterinary profession in Scotland, and it is creeping down the eastern coast line of England. This is " grass sickness " in horses. The causative agent has not yet been demonstrated, but it is without doubt a micro-organism inherent in pasture land which, when ingested by the horse, elaborates violent toxins in the system. Its analogy to botulism has been disproved, though the train of symptoms unquestionably points to the bacterial food poisoning group of micro-organisms. An exhaustive enquiry and continued research is contemplated with the object of a definite line of procedure in prevention and control.

For a good many years sheep diseases have demanded the attention of the veterinary scientist and the profession generally, and I am thankful to say that much progress has been made in laying bare causation and applying the appropriate preventive and curative treatment. Parasitic worm infestation is being successfully combated, while very important advances in the knowledge of such diseases as louping-ill or braxy have been made in recent years, and safe and practical means of immunisation worked out.

Lamb dysentery, which has constituted a veritable menace to flock masters during the past 10 years, has been vastly reduced in incidence and mortality through a special lamb dysentery serum, proving thereby of great economic value to the sheep-breeding industry, and earning the appreciation of flock-masters.

One is optimistic enough to hope, too, that at no distant date sheep scab will be added to the list of scheduled contagious diseases which have ceased to exist.

Swine fever continues to be a menace to an industry which is deserving of encouragement, but until diagnosis of the disease is more certain it is useless embarking on immunisation. There is still much to be done by veterinary science in the elucidation and differentiation of pig diseases in this country. Immunisation in America against hog cholera, as it is termed, has been very successful, but the disease in that country is more virulent, and in consequence more clearly defined than in this country.

With the enormous increase in recent years of dogs kept as pets and for companionship, and which incidentally is a source of great revenue to the State, canine veterinary practice has gone up by leaps and bounds. So has canine ailment and disability. The same may be said of cats. Proficiency and expert knowledge in canine and feline veterinary medicine and surgery is expected of the practising veterinary surgeon. Speaking as one whose path in life has lain chiefly with horses, though owning both dogs and cats, I take off my hat to the profound knowledge of disease and dexterity in surgical interference displayed in canine practice by the veterinary surgeon of to-day. Particularly would I remark on the great strides which have been made in the prevention of distemper in dogs. The experimental work carried out at the Farm Laboratories, National Institute of Medical Research, Mill Hill, by Dr. P. P. Laidlaw and Major G. W. Dunkin, M.R.C.V.S., has revolutionised the handling of that dire disease. There is now on the market a vaccine followed by dried virus, manufactured by arrangement with Messrs. Burroughs Wellcome and Co. at their Physiological Research Laboratories under the direction of Dr. O'Brien and Major Dalling, M.R.C.V.S., and only issued for use by veterinary surgeons, which is between 99 per cent. and 100 per cent. efficient as an immunisation method for canine distemper, whilst the Laidlaw-Dunkin concentrated antibody (hyper-immune serum) in subcutaneous injection has been proved to be of great value in the treatment of that disease provided it is used within seven days of the onset of symptoms. This happily satisfactory achievement reflects the greatest credit on all associated with research into this scourge of the canine race.

In the years subsequent to the Great War, impetus has been given to the poultry industry. Not only has poultry keeping afforded occupation and livelihood for ex-Service men smallholders, but large poultry farms and companies have been developed. The consequence is that where large congregations of the feathered tribe exist, diseases of a contagious and specific nature are apt to prevail, resulting in serious economic loss. My simple mind can scarcely grasp poultry farms of 10,000 fowls, with hatches of 1,100 chicks by incubators, and duck farms of 25,000 ducks, but under these circumstances I can appreciate mortality from disease and the very urgent desirability for studying the causative factors underlying the many curious afflictions to which poultry are liable, and the adoption of measures which will effectively bring them under control. In this connection the Veterinary Department of the Ministry of Agriculture has been very active. In the Ministry's Veterinary Laboratory at Weybridge, at all Institutes of Animal Pathology, and at other Veterinary Research Centres, much differential diagnosis work has been carried out, particular poultry diseases studied, and vaccine preventive treatment exploited, for it is only when the results of laboratory research can be satisfactorily applied that the poultry farmer of to-day will be relieved of the heavy burden of disease which now severely handicaps him. We may hope, therefore, that through veterinary scientific endeavour such devastating diseases as bacillary white diarrhœa, fowl pox,

fowl plague, Newcastle disease, "keel disease" in ducklings, and those of lesser degree such as fowl paralysis, contagious catarrh, and avian tuberculosis will be much reduced in incidence, whilst coccidiosis, gapes, and worm infestations generally can be made to disappear entirely. Though the value of poultry stock individually is not sufficient to engage the attention of the general veterinary practitioner except perhaps in valuable pedigree birds, still the knowledge gained by them in poultry diseases, and the special means of combating the same, will enable them in an advisory capacity to act with promptitude and with energy on the occasion of serious outbreaks of contagious poultry diseases. Whatever help professionally veterinary surgeons can give to poultry farmers and poultry keepers most assuredly would be welcomed by them.

It is, however, perhaps more on the surgical side of veterinary practice that the veterinary profession has made such rapid strides and shown such marked progress. There is barely any operation in human surgery that has not been attempted by the veterinary surgeon, and for the most part with signal success. The teaching of surgical procedure at our colleges leaves nothing to be desired; opportunity is abundant, and practice makes perfect. There are few people who are not deeply grateful to the veterinary surgeon for the restoration of their pets to normal health by surgical interference, or for a return to useful service of their horses by operation or treatment that comes within the province or definition of surgical conditions.

Abdominal surgery of all descriptions, and bone surgery, which includes the repair of fractures and the reduction of dislocations, has been raised in recent years to such a high degree of perfection in small animals as to astound the old practitioner of forty and fifty years ago. Methods in the application of anæsthesia for major operations have also been made to keep pace with operative technique, though one is tempted to say that for purposes of general anæsthesia chloroform still holds the premier place. Even operations on the heart for traumatic pericarditis have been successfully attempted in cattle, which would seem to set a seal to veterinary prowess and surgical proficiency.

Radiography too, in determining operative necessity and in aiding diagnosis, has been firmly established in veterinary procedure.

Having. however, been divorced for a large number of years from the surgical side of my profession and thrown into the welter of administration, I feel that I am not really capable of portraying the fine art of veterinary surgery in its proper perspective, so, with the permission of my audience, I am leaving this to abler and more experienced hands. I have arranged with Major Hobday, the Principal and Dean of the Royal Veterinary College, London, after my address, to give a series of film displays showing on the screen what veterinary surgery actually means and the success which is achieved by our profession in the alleviation of the disabilities and sufferings of animals, preservation of their health, and a continuation of their utility.

Having thus dealt with veterinary activities both past and present, which it will be acknowledged do credit to our profession, I now come to a matter of serious moment over which I would like the sympathy of my audience and the support of all animal lovers in these old islands of ours. For some years past there has grown up a system of unqualified practice. Animal dispensaries have been established in large cities and towns, travelling caravans tour the country inviting aid to animals, premises with the designation "Hospital for dogs and cats" purport to give advice and treatment. In no instance are these institutions or places under strict veterinary guidance, or staffed by qualified veterinary surgeons administering skilled treatment whether medical or surgical. It is very regrettable that this should be so. In the main it is inspired by a plea for treatment of poor people's animals, and in other instances it is mere shallow pretence. In any case it is deception and calls for counter action. Specious quackery must not be permitted to undermine enlightened treatment. Animals, including those of poor persons, are just as entitled to the skill of the trained veterinary surgeon as the human being is to the services of the doctor and surgeon. There can be no quasi or half measures, and the law should govern the situation. True it is that there is a Veterinary Surgeons Act of 1881, the purport of which is "to enable persons requiring the aid of a veterinary surgeon for the cure or prevention of disease in or injuries to horses and other animals to distinguish between qualified and unqualified practitioners," and that the Perjury Act of 1911 provides for fraudulent declaration, certificate or representation in respect to any vocation or calling, but these enactments are insufficient to meet the case either of practising veterinary surgeons, or of sick and injured animals which have to undergo veterinary treatment. The Veterinary Surgeons Act of 1881 should without question be tightened up to safeguard veterinary surgeons, owners, and animals alike. The only profession that is adequately protected is that of dentistry. The Dentists' Act of 1921 definitely prohibits the practice of dentistry except by registered persons. It would be very greatly to the advantage of both human beings and animals if similar measures existed in medical and veterinary circles. I do not mean to infer

that the law should be so circumscribed as to prohibit the farmer and stock-keeper from carrying out the usual minor operations on farm animals, the administration of proprietary remedies obtained from chemists for the prevention and cure of worm infestations in sheep, or to make inoperative the ordinary rules of first-aid treatment and prevention of disease and ailment which common sense directs, but when it comes to expert handling of medical and surgical conditions, full advantage should be assured to animals by the profession most calculated to understand their respective cases and relieve their sufferings by enlightened treatment. Great Britain is behind other countries in respect to the law governing the practice of veterinary medicine and surgery. For instance, in the Irish Free State the unqualified person is definitely ruled out. In the Veterinary Surgeons' (Irish Free State Agreement) Act which received the Royal Assent on March 17th of this year, para. 46 states:—

" (1) It shall not be lawful for any person to practise or to represent or hold himself out whether directly or by implication, as practising or being prepared to practise veterinary surgery or veterinary medicine unless he is for the time being a registered veterinary surgeon.

(2) Each person who acts in contravention of this section shall be guilty of an offence under this section and shall be liable in respect of each such offence on summary conviction thereof to a fine not exceeding one hundred pounds.

(3) Nothing in this section shall render it unlawful for any farmer or other person who habitually keeps animals for profit or the servant of any such person to perform or administer to an animal of any class (whether owned or not owned by such person) any operation or medicine, the performing or administering of which is incidental to the usual care and management of animals of that class, provided that such person or servant does not hold himself out as a registered veterinary surgeon."

On the Continent of Europe, too, the laws in respect to unqualified practice are very complete and exacting, the underlying reasons being attributable to matters of cruelty. Turkey is the latest to adopt new laws for the protection of animals. Through the instrumentality of the Society for the Prevention of Cruelty to Animals in Constantinople, an Order from the Ministry of Economy to every Vali (Governor) has been put into effect which prohibits quack veterinarians from practising, and as many animals have been rendered useless by quack treatment, the quack doctors are compelled to reimburse the owners of horses they have ruined to the full amount of the animal's value.

It would seem important and necessary that we should not lag behind other countries in expedient and example.

As I have previously remarked, so much of the trouble and difficulty centres in the animals of poor people who cannot afford to pay fees for the treatment of their pets. This need not be a source of distress or worry to a poor owner. At best the veterinary surgeon is a humane man; he is always anxious to bring his knowledge and skill into play in the relief of animal suffering and ailment, and I can say with truth that he is at all times approachable to the poor and needy. There are many veterinary surgeons who give advice and render treatment for no remuneration, and for those who can afford to pay a little in acknowledgment for successful services there is often a collecting box displayed bearing the words " Victoria Veterinary Benevolent Fund," into which small contributions are welcome. This Fund is the one benevolent organisation of the veterinary profession through which the widows and dependents of deceased veterinary surgeons are helped in their times of trouble. Free treatment, too, is carried out at all our veterinary colleges, where are well-equipped clinics with every convenience for most advanced medical and surgical treatment, by the staff of professors, on the same lines and carrying similar advantages to the medical schools and hospitals where human beings receive gratuitous attention and treatment.

However, to meet more adequately the circumstances of persons who are not in a position to pay veterinary surgeons' fees in whole or in part, a very comprehensive scheme has been inaugurated by the National Veterinary Medical Association and its Divisions throughout Great Britain and Ireland, in conjunction with the Royal Society for the Prevention of Cruelty to Animals and its branches in various cities and towns, whereby treatment to sick and injured animals may be administered only by qualified and registered veterinary surgeons. One can realise the necessity for such a movement being undertaken by a well-endowed humane organisation and appreciate the desire to avoid the haphazard diagnosis and treatment of animals by unqualified persons, thus assuring to all dumb creatures that skilled and enlightened attention which only the specially trained veterinary practitioner can render. It sets an example which other philanthropic bodies charged with kindness to animals might copy with advantage.

The scheme inaugurated is twofold in operation, *viz.*, (*a*) a centralised scheme, and (*b*) a decentralised scheme, whichever would appear

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most desirable or fitting in best with local conditions. In the former, provision is made for treatment at one point on the dispensary system, veterinary surgeons who co-operate under the scheme attending the centre by rotation at specified times. If it is considered necessary for an animal to be detained in hospital, such case is sent to the attending veterinary surgeon's private hospital and the nominal cost defrayed by the R.S.P.C.A. In the decentralised scheme all practitioners in a town work in co-operation with the local branch of the R.S.P.C.A. Patients for free treatment may be brought to the surgery of veterinary surgeons selected, at surgery hours or in urgent cases at other times. Books of tickets are provided by the R.S.P.C.A. and a ticket signed by one of their inspectors, by the police or other approved persons, admits the patient for free treatment. The veterinary surgeon himself can also sign the ticket if he considers the owner is unable to pay a reasonable fee. A quarterly account is rendered to the R.S.P.C.A., charges being nominal for medicines and visits, though if a major operation has to be performed, the Secretary is usually acquainted and a small fee charged. This latter scheme has been in operation for some years in one town, with immense success, and no treatment has ever been denied any poor person. It has also been adopted in other cities and towns. Veterinary surgeons and local branches of the R.S.P.C.A. are given a free hand to develop the scheme in the most suitable and practical manner possible, having regard to local circumstances. Under either scheme it is very important that :—

(1) The interests of the animals shall be adequately protected.
(2) The interests of the veterinary practitioners shall be protected from institutions and persons practising quackery.

I very earnestly plead on behalf of animals, of veterinary science, and indeed in the interests of owners themselves that when animals have the misfortune to fall sick and require treatment either of a medical or surgical nature, they should be seen by a member of the Royal College of Veterinary Surgeons (designated by the letters M.R.C.V.S. or F.R.C.V.S.) who, by virtue of his long period of training and experience, is fully able to reconcile effect with cause, and to apply remedial intervention with that appropriate skill which present-day science has determined.

Quackery, and the ignorance which surrounds it, can have no place in this enlightened age. The limbo of the past and the refuse heap is its proper sphere, and the law of the land should be such as would assure to both human beings and animals only that treatment, preventive and curative, as may be directed by medical and veterinary science and approved of by the governing bodies of their respective professions. It is an obligation to which both human beings and animals may lay just claims, and speaking from the point of view of my own profession, I am looking forward to the time when a wrong will be righted, and when the veterinary profession, and the great work it is doing for animals, will receive that public recognition and support it so well deserves. (Applause.)

Before I close I think it an especial duty on my part to refer to the sterling service rendered by the Royal Army Veterinary Corps during the Great War, and also to pay tribute to the achievements of the animals that took part in it. The rapid expansion of the Expeditionary Forces in the various theatres of operation not only necessitated a large number of animals but a corresponding increase of veterinary officers and other ranks to attend to them in their disabilities. Having directed the veterinary services of the Expeditionary Force in France I can bear full testimony to the splendid response of the veterinary profession as officers in charge of units and veterinary hospitals, and the fine spirit of service shown by the N.C.O's. and men, the majority of whom were specially enrolled on account of their knowledge of animals. It would take me hours to recount what was done in that very trying time, so instead of wearying my audience with a long recital of duty well done, I have brought along about 500 copies of a little booklet I published a year or so ago, which gives a brief account of the part played by animals during the war and the means taken to repair wastage and disability. I should be pleased if all present here to-night would take away as many copies as they wish and give them to friends as a short war history. I may say that its publication was a small effort on my part to add to the Rebuilding Fund of the Royal Veterinary College, London, and its bank balance now stands at a little over £500.

Your Worship, ladies and gentlemen, I trust I have not wearied you with too long an address. I thank you for a very patient hearing, and hope what I have said has been of interest to you all. (Loud applause.)

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The Film Display

Following delivery of the Popular Lecture, Professor F. T. G. Hobday, Principal of the Royal Veterinary College, London, assisted by Mr. P. Southern at the lantern, gave a most interesting selection of items from the College Film Library, followed by a series of lantern slides.

Principal Hobday, in the course of his introductory remarks, said that he proposed to show them that night the application of the film (including slow motion) to the demonstration and

teaching of the symptoms and treatment of animal ailments.

Its advantages to the student were too obvious to need comment, as everyone knew how much easier it was to understand a thing when the eye could see it, than when an appeal was made to the ear alone—and the advantage to the teacher was enormous.

He should commence with a selection of animal ailments, and terminate with some pictures of the Royal Veterinary College—the buildings of which were now so very dilapidated that they had issued a national appeal for the sum of £500,000 for building and endowment—and of which sum he was pleased to be able to say that half was now assured. (Applause.)

In a lantern slide demonstration after, he would show them, as a contrast, some of the modern Continental college buildings. That would be followed by a series of lantern slides illustrating some of the diseases mentioned by Sir John Moore and some of the patients which were treated in the every-day practice of a veterinary surgeon.

They still had some horses left—but, as Sir John Moore had told them, nowadays they were not horse doctors only, but dealt with the question of research into the domain of preventive medicine, the skilled inspection of meat and milk, the provision of veterinary control of the animal epidemics in the Colonies, and many other points which could only be successfully combatted by a scientifically trained veterinary profession.

Amongst our household pets, the dog, as every English man and woman knew, occupied a place which was often much more precious than even the husband in the house—(laughter)—and the treatment of canine diseases now occupied the greater part of the time of many practitioners while, as Sir John Moore too had told them, even the diseases of birds had become of the utmost importance; for there was in England at the present time, more money invested in poultry than in wheat. He hoped that what he would show them would serve—when they read their Folkestone paper on the following morning—as a sequel to impress upon their memories the points which Sir John had given them in his lecture that evening. (Applause.)

The clinical subjects illustrated in the film demonstration were, in the order of their presentation, as follows:—ringbone, stringhalt, and asthma in the horse; rickets, chorea, and lumbar paralysis in the dog, while a paralysed dog in slings, a dog with fractured pelvis, walking on the forelegs only, and a dog with both forelegs fractured, were also shown.

Both the films and the slides were viewed with great interest by the company, and from the frequent applause it was evident that the demonstration was a highly-appreciated feature of the proceedings.

At the close the Mayor voiced the gratitude of all both to Sir John Moore for his outstandingly interesting and useful Public Lecture, and to Principal Hobday for a film and lantern display which had been a revelation to the company not only as regarded the progress of veterinary science and teaching, but as revealing the imperative need that such services should be rendered in an institution which should at least bear comparison, in point of buildings and equipment, with the magnificent Continental veterinary colleges that had been depicted that evening.

A hearty vote of thanks to His Worship for his occupancy of the chair concluded a memorably successful and enjoyable evening.

EXHIBITION OF SURGICAL INSTRUMENTS, DRUGS, ETC.

An Impressive Display

OFFICIAL OPENING BY THE PRESIDENT

The veterinary profession in general, and perhaps the official organ of the N.V.M.A. in particular, owe much to the leading firms of veterinary instrument makers and druggists who support the Annual Congress of the Association by their presence as Exhibitors. It is therefore with very real pleasure that we pay our tribute to the splendid and successful effort made by one and all at Folkestone—despite the prevailing depression in the business world—to stage an effective display.

The Exhibition Hall was admirably suited to the purpose and, in view of the fact that it was situated over the office of the Local Secretary, it is a matter for regret and surprise that the attendance of members throughout the week was by no means as large as exhibitors were entitled to expect. It is earnestly to be hoped that, on the occasion of future Congresses, attenders will, by a demonstration of their interest in this feature, do more to assist the Provisional Committee, the Association's journal, and, above all, the firms who are at such pains to present veterinarians with the opportunity to gain acquaintance with the new instruments and drugs so tastefully and effectively brought to their notice.

The Exhibition was formally opened by the President, in the presence of a large assembly, on the morning of Monday, August 8th.

The President said that the first duty he had to perform at that Congress, as their President, was to declare open that very fine exhibition of veterinary instruments, drugs, sundries, etc. (Applause.) He had been unable to take other than rather a cursory glance at that very good

exhibition, but from even so short a glance one could not but be struck by the great amount of care, thought and expense that the firms represented there that day had taken in order to provide them with a real feature of the Congress. If members attending Congress would only come and look round that hall they would, he felt sure, learn and gain as much knowledge as they would do, perhaps, at the Town Hall opposite.

They had there that day some twelve firms exhibiting. Amongst those twelve firms were some which they might say were very old friends of the profession—(hear, hear)—one of which he noted had just celebrated its centenary—(applause)—and during that time, there was no doubt, had been very closely allied to the veterinary profession. Amongst the firms exhibiting for the first time was one giving a display of electrical apparatus in connection with X-ray and ultra-violet light. They were exhibiting in a room downstairs, and he was given to understand that a representative would be there upon every day of Congress and would be only too pleased to give anyone a demonstration of the use of the apparatus. He (the President) was convinced that in these days the veterinarian must take advantage of every such opportunity of increasing his knowledge and experience of such up-to-date methods of diagnosis and treatment.

There was a good gathering there that morning, but many members attending Congress were unfortunately not present—probably because they had not yet arrived in Folkestone —and he would ask all those in that hall, when they later mixed with those who were not participating in that pleasant little function, to impress upon them the real necessity of coming and having a quiet look round all those admirably equipped stalls, because he was sure they would all learn something from so doing.

He thanked those firms most sincerely for all they were doing both for the Congress in particular and for the profession in general (Applause.) He knew—and he thought they all knew and appreciated the fact—that without firms of standing such as those whose splendid displays constituted that excellent exhibition, the veterinary profession would not be able to make those advances in surgery and curative medicine that were so striking a feature of modern veterinary practice and which were, in no small measure, an outcome of that co-operation to which he had referred.

With those few words he had great pleasure in declaring that exhibition open. (Loud applause.)

A very charming feature of the ceremony followed in the presentation to Mrs. Simpson, on behalf of the representatives of exhibiting firms, by Miss Hodges, daughter of a representative of Messrs. Willows, Francis, Butler and Thompson, of a beautiful bouquet.

This gracious thought and act were acknowledged, on Mrs. Simpson's behalf, by the President, who assured the gentlemen representing the exhibiting firms of her deep appreciation of that very kind gesture.

Messrs. Armour & Co., Ltd., Armour House, St. Martin's-le-Grand, London, E.C.1, had on their stand a range of those "Glanoid" medicinal products of animal origin which would be of interest to the veterinary surgeon, including Concentrated Fluid Extract of Liver, Ferroglanoid, Thyroid, Pituitary Anterior Lobe, Pituitary Posterior Lobe Extract, Suprarenalin Solution, Thromboplastin Solution (a local hæmostatic); ligatures both sterile (60 in. tubes), and unsterile (in 10 in. by 10 ft. lengths), together with specimens of the Suprarenal, Corpus Luteum and Ovary. The great possibilities of the administration of glandular products were explained to those members of the Conference who visited the Exhibition, chief interest being displayed in Anterior Pituitary Solution in ampoule form which, having a great stimulating effect on the corpus luteum, is indicated in cases of delayed œstrum and sterility.

Arnold & Sons' exhibit included a comprehensive display of hospital furniture and equipment for the modern operating theatre, which created an impression amongst the visitors.

The portable electric lamp (which was used over the operating table) is a great asset to the veterinary surgeon; not only does it give a valuable light for operating, but may be used also for sunlight treatment where necessary.

A new model electric hair clipper for horses, dogs, cats, etc., saves valuable time where local clipping is necessary in connection with intradermal tests.

Intradermal calipers and an intradermal syringe also aroused interest.

A new model adjustable embryotome, offering many advantages over older types, was also shown.

Amongst many other instruments were Maclean's Teat Instrument, Trumps' Pattern Teat Roller, etc.

The firm make a feature of the construction of instruments to surgeons' own particular requirements.

Messrs. Bailliére, Tindall & Cox. 7 and 8, Henrietta Street, Covent Gârden, London, W.C.2, were represented by a stand which was undoubtedly amongst the exhibits of most direct interest to veterinary surgeons. On the stall of these well-known publishers of veterinary books were to be found copies of every current

veterinary book in the English language, including such standard works as:—

Hoare's "Veterinary Materia Medica and Therapeutics";
Fleming's "Veterinary Obstetrics";
Edmonds' "Diseases of Animals in Tropical Countries";
Dollar's "Veterinary Surgery";
Hutyra and Marek's "Special Pathology and Therapeutics of the Diseases of Domestic Animals";
Kaupp's "Poultry Diseases";
Hunting's "Art of Horse-Shoeing";
Hobday's "Diseases of the Dog and Cat";
Bullock's "Law Relating to Medical, Dental and Veterinary Practice";
Bullock's "Handbook for Veterinary Surgeons"
Kirk's "Diseases of the Cat";
Lander's "Veterinary Toxicology";
Muller's "Diseases of the Dog";
Miller's "Veterinary Dictionary";
Reeks' "Diseases of the Horse's Foot";
Smith's "Manual of Veterinary Physiology";
Banham's "Veterinary Posology";
Buchanan's "Veterinary Bacteriology."

We understand that the same firm will very shortly publish an important veterinary book which has been in preparation for a considerable time—"A Textbook of Veterinary Pathology and Bacteriology" by Professor Gaiger and Mr. Davies. A work from the hands of these well-known authors is likely to receive a hearty welcome at the hands of the profession.

Boots Pure Drug Co., Ltd., Nottingham, were most welcome new exhibitors at Congress, and staged an effective display in five main groups. First came a wide range of Lederle biological products (vaccines and sera) from the world-famed laboratories of that name, which are under the directorship of Dr. Eichhorn, formerly Chief of the Pathological Division of U.S.A. Bureau of Animal Industry. Their range includes a new series of whole-culture vaccines, *i.e.*, they contain not only the whole organism but the specific products of growth as well. The actual organism has been chemically killed, inactivated with formalin, and so cannot produce the disease. The increased immunising properties of these products enable the whole-culture vaccines to be used in large doses, so rendering it possible to ensure a maximum degree of immunity with safety.

The list of whole-culture vaccines includes:—Equine Influenza Vaccine, Hæmorrhagic Septicemia Vaccine (Bovine, Cattle), Hæmorrhagic Septicemia Vaccine (Sheep), Hæmorrhagic Septicemia Vaccine (Swine, Porcine), Mastitis Mixed Vaccine (Bovine), Mixed Bacterial Vaccine (Bovine), Mixed Bacterial Vaccine (Swine), White Scour Vaccine.

A special feature with some Lederle preparations is the Special Syringe Pack. The barrel of the syringe forms the packing vial—the needle is simply inserted through the rubber cap and the glass rod fixed into the rubber plug at the other end forms the plunger.

The second group of products exhibited by this firm comprised iodized mineral salts—to meet the demand for a mineral supplement necessary to complete balanced rations under ordinary conditions. The range of mineral supplements includes:—

1. Iodized mineral salts for cattle (for dairy cow and general use).
2. Iodized mineral salts, special formula (for use where there is pronounced calcium deficiency).
3. Iodized mineral salts for poultry.
4. Iodized mineral salts for dogs and silver foxes.
5. A liquid preparation, iodized tonic syrup, containing calcium, iron, iodine, phosphates and hypophosphates with hæmoglobin, lecithin and bone marrow. This preparation is especially suitable for young animals and is to be given in the drinking water (or with food).

Acriflavine and acriflavine preparations were also on view. This is a powerful antiseptic, the potency of which is increased by the presence of serum—an advantage possessed by no other antiseptic in general use. In serum the bactericidal potency of acriflavine is 800 times that of carbolic acid and 20 that of corrosive sublimate.

Acriflavine is available in the following forms:—Acriflavine; Neutral Acriflavine (suitable for hypodermic and intravenous injections); Solution Tablets, Acriflavine—0·87 gr.—1·75 gr., 2·187 gr.; Emulsion Acriflavine—1-1,000 liquid paraffin base (used for raw and open wounds, septic injuries, etc.); Pessaries (various sizes—for cattle, ewes, bitches, etc.).

Veterinary cod-liver oil was also shown. This product is subject to regular tests in the pharmacological laboratories of the Pharmaceutical Society—these being actual controlled feeding tests for both Vitamins A and D, confirmed by chemical tests for genuineness and purity.

General pharmaceutical preparations exhibited included samples of capsules (castor oil, cod-liver oil, male fern extract and carbon tetrachloride, etc.), and samples of tablets (ichthamol, calomel, arsenious acid, pluri-glandular, chloramine T., parathyroid glands, and corrosive sublimate.

Burroughs Wellcome & Co.'s products demonstrated the progress which veterinary science continues to make, especially, perhaps, in regard to the prophylaxis and treatment of animals by means of sera and vaccines.

The ultra-visible virus which the researches of Laidlaw and Dunkin have shown to be the cause of canine distemper can be rendered harmless by the injection of a dose of "Wellcome" Distemper Prophylactic Vaccine, followed, fourteen

days later, by a small dose of "Wellcome" Distemper Prophylactic Virus (Dried). The Director of the Wellcome Physiological Research Laboratories urges on all veterinary practitioners the importance of sending to him at Langley Court, Beckenham, Kent, reports of dogs under treatment. Scientific workers are largely dependent on such reports for the accumulation of the clinical experience essential to the preparation of products for the elimination of canine distemper.

"Wellcome" Leptospira Vaccine (Canine), which is used chiefly as a prophylactic in kennels in which periodic outbreaks of jaundice occur, and "Wellcome" Anti-Leptospira Serum (Canine), which is used both to confer temporary protection and as a remedial measure, were also shown.

For the prevention of dysentery in lambs, "Wellcome" Lamb Dysentery Prophylactic (Vaccine) prepared from organisms isolated from lambs affected with lamb dysentery, has proved of considerable value. In carefully controlled field experiments, ewes injected once during autumn before tupping time (*e.g.*, October) and again once during pregnancy, as near to lambing time as possible, have produced lambs among which the death-rate from lamb dysentery has been reduced to a low figure, whereas the lambs born from uninoculated ewes on the same farms and kept under the same conditions, have died at the usual rate. The use of "Wellcome" Improved Braxy Prophylactic (as experiments on infected farms have demonstrated) has materially reduced the incidence of this complaint. Approximately 7,000 hogs have been under observation; the mortality has been 8 per cent. in the unprotected and 1 per cent. in the inoculated on the same farms.

For the treatment of erysipelas in pigs, "Wellcome" Swine Erysipelas Serum, made by immunising horses with several strains of *B. erysipelatus suis*, has been proved of high value when tested by the Frankfurt mouse method and the Laurens pigeon method, as practised in Holland. As a prophylactic measure, "Wellcome" Swine Erysipelas Vaccine (Living) is recommended for healthy pigs on non-infected premises. The first injection of this vaccine is used in conjunction with the serum, *i.e.*, in the serum-simultaneous method, full details of which are given in a booklet issued by Burroughs Wellcome & Co.

A recent addition to the list of their products is a Fowl-Pox Vaccine (Pigeon Pox Virus). Experiments show that birds treated in accordance with the technique described in a circular issued by the firm will remain immune for several months.

All serological products distributed by Burroughs Wellcome & Co. are prepared at the Wellcome Physiological Research Laboratories, Beckenham, Kent, England, and are therefore exclusively of British origin.

In addition to the section devoted to serological products, a wide range of "Tabloid," "Tabloid" Hypodermic, "Soloid," "Wellcome," and "Enule" products, together with a selection of "Agla" Hypodermic Apparatus was exhibited. The use of "Tabloid" products removes many of the difficulties inherent in the administration of medicinal substances to animals, while "Soloid" products—intended for external use—obviate the difficulty of making, keeping and transporting stock solutions and have, in consequence, been of the greatest service to veterinary surgeons.

Genatosan, Ltd., Loughborough, were displaying the complete range of vaccines, sera and Diagnostic Products of the Pasteur, Toulouse and Laigle laboratories. The general preparations of this firm, *viz.*, Sanatogen, Genasprin, Genozo Tooth Paste, etc., were also shown and attracted considerable attention.

The principal biological products exhibited were:—

Nator B.—Composed of sterilised bacteria and is detoxicated; in consequence it is used either before or during gestation, without risk of infection.

Tuberculin.—Prepared in the Pasteur Institute, Paris. Three types are issued—Subcutaneous, Intradermal and Avian.

Anthrax Vaccine and Serum.—The original Pasteur products which are universally used with success.

Mulsor and Diamil.—For preventive vaccination and curative treatment of bovine mastitis.

Tregor.—For preventive and curative treatment of joint-ill, etc., in foals and calves.

Erysipelas Vaccines and Sera.—The products of the Pasteur Institute and the Toulouse Institute.

Tetanus Sera.—Anti-Tetanic Sera for prophylaxis (1,500 U.S.A. units) and curative treatment (5,000 U.S.A. units); also the special *Anatoxin* prepared by Professors Ramon and Descombey.

Blackleg Vaccines and Sera.—Prepared in the Toulouse Institute under the direction of Professors Leclainche and Vallée. Living Spore Vaccines (liquid and pellet forms) are issued; also the new Blackleg *Total Aggressin*, which was the subject of good reports at the last International Veterinary Congress.

Cytor.—A polyvalent vaccine for prophylaxis and treatment in surgical and cutaneous infections; especially useful in cases of interdigital cysts in dogs.

Alvor.—Although primarily intended for the treatment of broncho-pneumonia in calves and lambs, this product has also proved successful

in cases of pulpy kidney in Lambs (see *Veterinary Record*, March 26th, 1932).

Messrs. C. J. Hewlett & Son, Ltd., Charlotte Street, London, E.C.2, had an attractive exhibit to which particular interest attached, as this well-known firm celebrated their centenary this year, a fact which was gracefully alluded to by Colonel P. J. Simpson, F.R.C.V.S., the President of the National Veterinary Medical Association, in his opening address. Messrs. Hewlett had a comprehensive display, made especially attractive by their handsome mahogany exhibition stand.

Among the newer instruments shown was the Raison Syringe, specially recommended for dental work, but also useful for hypodermic or subcutaneous injections with local anæsthetics. It is perfectly sterilisable, takes any kind of needle with a metal head and can be mounted and unmounted in a few seconds without the use of a spanner, as it may be made quite water-tight without tightly screwing up. A further advantage is that needles cannot jamb and can be used several times. It is supplied in a cardboard or aseptic metal case. Another exhibit was the Penlite auriscope, complete with spare lamp and battery, which is equally useful for diagnosis or operating as it gives an intense illumination. Veterinary pocket instrument cases, with detachable and washable linings, were prominent and attracted considerable attention. Among the instruments devised by veterinary surgeons was Snaith's milk fever syringe teat tube, with metal screw cover that can be sterilised; Elphick's wool-holder, with bayonet catch and flat handle; Mitchell's transfusion tube, with silver needle fitted into a thick rubber tube and connected with sterilisable tin-plated lead tubing; Croudace's set of caponing instruments; Ryan's calving and foaling wire ropes, and hypodermic and intradermal syringes, both glass and all-metal.

The importance of calcium-dextrose in the treatment of milk fever is universally recognised and the 5 per cent. sterile solution for injection is now supplied in rubber-capped amber bottles of 60 c.c. in boxes of six bottles, and also in bulk. The calcium-dextrose is put up in powder form in 1-oz. and 2-oz. packets, also in bulk, and the firm have introduced a compound calcium-dextrose powder, for calcium deficiency in cattle, in 6-oz. tins or in bulk, the dose of which is one tablespoonful twice daily with treacle or mash. Emulsio Alkalina is a convenient preparation containing 15 grains of the alkaline carbonates of bismuth, soda, lime and magnesia, in each fluid drachm, according to the formula of Professor MacLean, and has proved useful in the treatment of gastritis, indigestion, etc., the dose for dogs being half to one teaspoonful in water according to size. Pulvis Alkalinus is the name given to MacLean's powder, which is packed in 2-oz. and 4-oz. cardboard drums and in bulk.

Vitonagen is an improved tonic, combining the advantages of the glycerophosphates with nucleinic acid and the anti-neurotic properties of water-soluble Vitamin B extract.

Mist. Pepsinæ Co. *c.* Bismutho (Hewlett's), which has been one of the favourite remedies of the medical profession for indigestion, gastritis, etc., for over 50 years has now been introduced successfully for veterinary purposes. The dose for dogs is 10 to 30 minims, large dogs 1 drachm.

Antiseptic Cream, another of Hewlett's medical specialities, prescribed for eczema, abrasions and skin irritation, is being used by a number of veterinary surgeons for a similar purpose. Inject. Procaine has replaced cocaine as a powerful local anæsthetic, being non-irritant and only about 1/10th as toxic. It is recommended for intradermal, neural or spinal anæsthesia for minor operations, such as painless firing, drilling, removing warts, cysts, etc., and is particularly useful in canine surgery.

There appears to be no waning in the popularity of the older remedies such as Antithermogen for tendonitis, sprains, etc.; Parophyroxia for colitis in horses caused by undigested food; Elixir Hormonigen for asthma, bronchitis and chorea, after distemper in dogs; Virophos, an ideal nerve tonic and stimulating food for dogs and cats, particularly during convalescence; Skin Dressing (Powder) with derris, making an effective bath for dogs; Maltovin, containing malt, phosphates with beef and iron wine.

The vaccines, sera, bacterins and aggressins of the Bacteriological Institute, Tours, prepared under the supervision of Dr. Belin, and also the products of the Jensen-Salsbery Laboratories, for which Messrs. Hewlett are the sole agents, were exhibited and a special booklet concerning them has been printed and will be sent to any veterinary surgeon on application. They include over 40 kinds in stock for diseases in horses, cattle, dogs, swine and poultry.

The Holborn Surgical Instrument Co., Ltd., showed a large assortment of veterinary instruments and appliances, including a useful enamelled iron operating table for dogs, with adjustable leg flaps, thus enabling the table to be used for practically any kind of dog. This table has several advantages, and is, moreover, reasonable in price, *viz.*, £8 15s. They also showed a combined aseptic instrument cabinet and table, a most useful asset for a consulting room.

The Burdizzo Pattern Castrating Clamp was well displayed. This instrument, which is an Italian invention, has not been made in England until quite recently, when the Holborn Co. put down the necessary plant for producing it in London.

Practically every up-to-date instrument a veterinary surgeon requires was shown on this stand, amongst which we noticed a very useful

parturition sleeve made entirely of rubber, with a waterproof cuff; Kirk's Dog Tail Holder, which has recently been improved upon; pessary moulds with which a practitioner can make his own pessaries and thus effect a considerable saving; and an aseptic bag for entirely covering a cow's udder, which prevents milk sucking and protects sore teats and torn udders.

We understand the company hold a very large and assorted stock and can execute orders promptly.

The International Serum Co., Norwich, displayed a wide range of sera and vaccines, and, as is well known, the firm specialises in Swine Erysipelas Serum and Vaccine, Swine Fever Serum, Abortus Vaccines (*live and dead bacillus*), and Mastitis Serum and Vaccine.

The International Serum Co. also exhibited Pasteur's Diagnostic Tuberculins, Intradermal Tuberculin (German) in 10 c.c. bottles with puncturable rubber caps, and Homologous Distemper Serum.

Messrs. Parke, Davis & Co. displayed a representative selection of their biological and pharmaceutical products. Amongst the biological products shown were Anti-Influenza Serum (Equine), Anti-White-Scour Serum (Bovine), Concentrated Tetanus Antitoxin, Canine Mixed Bacterin, Canine Mixed Antigen and Staphylococcus-Streptococcus Bacterin, Canine.

For the treatment of parasitic infestations several products were shown, namely, "Flukoids" for liver fluke in sheep; "Nema" Capsules for round worms in all farm stock; "C.A." Capsules for both round worms and tape worms in poultry; Arecoline and Chloretone Capsules for tape worm in dogs. Local anæsthetics were represented by Codrenine and Locosthetic, two preparations containing cocaine, and Parsetic, a non-cocaine product which is also valuable in the production of spinal anæsthesia.

Pituitrin, tuberculins, mallein, and a comprehensive selection of pills, compressed tablets, and elixirs, were also displayed.

Messrs. Philips Industrial, 145, Charing Cross Road, London, W.C.2, presented a feature new to Congress and one which many members took advantage of the opportunity to witness, in some very interesting demonstrations by their X-Ray Division.

A number of animals, including a horse, were X-rayed in the demonstration room and the finished radiograms, available within a few minutes of being taken, were a centre of interest. Sixty or seventy films and positive photographs of animal subjects, and which were the work of Major Hamilton Kirk, were effectively displayed around the room.

Safety and simplicity of operation, coupled with real portability, are the outstanding features which the makers claim for the "Metalix-Junior" Shockproof Unit.

Weighing but 70 lbs. when packed in the special cases for transit, it covers the whole field of Radiography in small animal practice, while very useful radiograms of the Tibia, Hock, Humerus, Radius, Metacarpal and Metatarsal bones of a horse can be obtained. The actual X-ray unit consists of a special "Metalix" X-ray tube encased in a metal shield, at one end of which is fitted a motor-driven fan for cooling during long periods of operation. At the centre of the tube surrounding the enclosure in which the X-rays are generated, is fitted a lead sleeve of sufficient thickness to suppress all unwanted radiation. The size of the aperture through which the rays emerge from the tube is such that the spread of the X-ray beam is restricted to the area desired to be covered.

The high tension conductors which connect the tube to the high tension transformer are of special design and absolutely shockproof. Here also the robust construction of the apparatus is apparent, the cables being encased in flexible metal sleeves. The assembling of the set consists of making three connections only, namely, the two H.T. cables to the transformer by means of two large finger-tight union nuts and a three-point plug which connects the set to the mains. None of these connections is interchangeable and by means of special Safety Inter-Locks the apparatus cannot be assembled or dismantled while connected to the electric supply.

The tube is mounted on telescopic legs when ready for use and permits complete rotation around its vertical axis. The operation of the time switch, which is the only control, consists of setting a pointer to the number of seconds required, the exposure being then made by pressing a button. A standardised technique enables the correct exposure to be found without previous trial.

During the time that the X-rays are being generated the set is quite silent.

The electric energy consumption is 3·5 amps at 220 volts and where alternating current of from 110-115 and 220-230 volts is available the set can be plugged into any ordinary lighting-socket without altering the fuses, and where alternating current voltages other than those stated are the only source of supply, an Auto-Transformer can be fitted to adjust the voltage to the correct value.

Where direct current only is available a small rotary converter is the means employed to supply the current alternating voltage for the set; special generators can be supplied for use where there is no electrical supply.

The safety measures adopted to make the set 100 per cent. safe, coupled with the ease with which first-class radiograms can be obtained, bring into veterinary practice a most valuable aid to diagnosis, that hitherto was impracticable.

The "Metalix-Portable" Shockproof X-ray Outfit in Special Carrying Cases. Can be assembled ready for use in five minutes.

The Sandoz Chemical Works, 5, Wigmore Street, London, W.1, justly famed as the originators of Calcium-Sandoz (calcium gluconate), exhibited the various forms in which this product is offered to practitioners. It was emphasised that calcium gluconate "Sandoz" is a pure salt of known and definite composition containing 9·3 per cent. of calcium element. The dosage recommended in milk fever is that necessary to bring about a cure without resorting to mammary inflation. The technique of subcutaneous administration was explained, stress being laid on the advisability of utilising only a water-clear solution at a temperature of approximately 115° F. The new ampoules of 275 c.c. 10 per cent. solution of Calcium-Sandoz were the subject of favourable comment, presenting as they do a perfect solution at a reasonable cost.

Messrs. Sandoz have also introduced a new form of Calcium-Sandoz for oral use only. This new product has the great advantage of being eminently suitable for oral administration, in calcium deficiency diseases, at a lower cost than could have been anticipated.

Piroblue, a product for the treatment of piroplasmosis, elaborated in the Sandoz Research Laboratories in collaboration with Sir Arnold Theiler, has secured a permanent place in veterinary medicine. Maximum efficiency combined with low toxicity are its peculiar assets.

Lobeline-Sandoz, also shown, has recently secured the attention of the veterinary profession. This remarkable respiratory stimulant is, it is claimed, destined to become an indispensable adjunct of the practitioner's kit.

Ergotamine, the crystalline alkaloid of ergot of rye, first isolated in the Sandoz Laboratories in 1918, was quickly recognised as a new substance of great value. Since then scientists and clinicians throughout the world have almost unanimously agreed that its discovery and utilisation have definitely solved the problem of ergot action, and disposed of many fallacies. Femergin (ergotamine tartrate) was shown in ampoules, tablets and solution.

The exhibit of the Sandoz Chemical Works demonstrated their determination to produce only new and improved substances, with full disclosure of their formulæ, and definitely to reject the marketing of imitations, and combinations of drugs, which contribute nothing new to therapeutics.

Messrs. Willows, Francis, Butler and Thompson, Ltd., a firm which is now approaching its second century, had a handsome display, which combined old-time dignity with modern progress.

A reminder of other days was the finest block of Barbados aloes we have ever seen, and which, they inform us, finds a ready purchaser in the veterinarian who is proud to use "the best."

"Willows" dextro-calcium, which has won its way to the front in the favour of the profession, was shown in all its forms, and aroused much interest in the calcium therapy treatment. Two important claims for Willows dextro-calcium are that it does not give rise to sloughing, and the dose is not unduly bulky.

"Willows Chlorocain" was well in evidence, and holds "pride of place" as the local anæsthetic in general use amongst practitioners.

Several new preparations were exhibited, notably, Mist. Bismuth Salicyl Co., for scour in calves, Elixir Bromo Valerian for chorea and general nervous affections in dogs, and also Tenaline (the popular vermifuge for dogs) in elixir form which is palatable and readily taken. Willows' colloidal preparations of manganese, iodine, iodine oil with methyl salicylate, and silver are a most useful series in this method of treatment.

The older and standard preparations, such as Willows' Chlorodyne, Iodotan, Dermatidine, Plasmul, Pethdar—to name only a few of so many familiar to the profession—enhanced the setting of the stall.

The firm are agents for the Pasteur Institute, the Cutter Laboratories, etc., and showed a comprehensive variety of vaccines and sera sufficient for practically every need.

An attractive selection of instruments was also provided, and proved of interest. Amongst the novelties in this department is the Airosana Vaporiser in two sizes for kennels and stables. It is adapted for use with electric current and the vapour arising from the special fluid prepared by Willows is most useful in the relief of pulmonary affections in animals.

We cannot say more than that "Willows" have every reason to be proud of their efforts and the interest their stand created at the Exhibition.

XUM

THE CLOSING MEETING

VOTES OF THANKS

Declaration of Close of Congress

The closing meeting of the Congress (adjourned Annual General Meeting) was held at the Folkestone Town Hall on Saturday morning, and was attended by quite a large number of delegates and their ladies.

The President, who took the chair, said he would start the agenda of that adjourned meeting with the first item, which was the induction of the new President. Perhaps they were aware that the speaker had to go on for another year. Of course, he felt the honour very greatly, and he thought perhaps the ceremony might be dispensed with.

There were no matters which had arisen during the Congress that had to be submitted to that meeting; and there had been no resolutions sent up from any of the papers for discussion, so there was no business arising from that.

He now came to the votes of thanks, and the first was was, perhaps, a needless one. It was a vote of thanks to the President, and he would call on the Hon. Secretary.

The Hon. Secretary said he was sure they would all like to express their warmest appreciation of the work which their President had done during that Congress week. They appreciated very much the services the President had rendered to them, not only during that week, but also throughout the year for the benefit of the profession and for that Association particularly.

It would be useless for the speaker to say anything more, for they were all familiar with the excellent work their President had done, and they had signified their approval already by electing him to the chair for the third time. (Applause.)

He was sure they would go on, under the President's régime of office, to even greater prosperity than they had had during the past two years, and the speaker would say no more than to ask them to express, in the warmest possible way, their appreciation of the excellent work the President had done for them, and to pledge him their warmest support throughout the coming year. (Loud applause.)

The President said he thanked them most sincerely for the very kind words that the Hon. Secretary had spoken and for the hearty reception they had given those words. Needless to say, the office of President did entail a very considerable amount of work.

When he came down to Folkestone, he was thinking—he would not like to put it "Thank goodness that is done with"—but he had anticipated perhaps a little more time to himself during the forthcoming year. However, circumstances arose so that he felt it his duty to accept the very high honour they had conferred upon him by electing him for the third time as their President.

It had been a most enjoyable time to him during that Congress, which he was perhaps boastful enough to say he thought had been a success. (Hear, hear.) That was not due, of course, entirely to his own efforts, but it was due more particularly to the members of the Association for turning up in such large numbers and for so well supporting the papers and the discussions and the social functions. If no members put in an appearance, no President on earth could make a Congress a success, but he thanked them for having proposed that vote of thanks and for the way in which they had received it.

Professor Buxton said it was a very great privilege to have the opportunity of proposing a vote of thanks to various bodies and individuals who had done so much to assist in making their Congress a success. In the first place, they had to thank very heartily the Town Council of Folkestone for the use of that Town Hall, and the Mayor of Folkestone for his interest in and valuable services to the Congress. Not only had the Mayor taken much trouble in attending their social gatherings, but he had even been to many of their sectional gatherings, and the speaker thought they must appreciate that very deeply. (Applause.)

He also wanted to include in that vote of thanks their gratitude to the Folkestone Golf Club for granting facilities for members to play golf over their course, and for making special arrangements for the Victoria Veterinary Benevolent Fund Trophy Competition, and also to Pratt and Company for allowing members to attend the race meeting at a reduced charge. He had pleasure in moving a cordial vote of thanks to all those helpers. (Applause.)

The President observed that by the enthusiasm shown, he did not think it necessary to put that to the meeting, and he declared it carried.

It now fell to his lot to speak again. He did so with very great pleasure indeed, the next vote of thanks having been allotted to him because, he thought, he could claim perhaps to be one who knew more about the persons whom they were about to thank and their work than any other member of the Congress.

He wished to propose a very hearty vote of thanks indeed to the Provisional Committee. (Applause.) They started, of course, always with a very large Provisional Committee—or, at least, in the past they had done so. It was very obvious to anyone that somewhere in the region of 60 per cent. of that very large Provisional Committee took small further interest in

it, and, in fact, they could not be expected to do so. All the members of the Council were members of the Committee, or were until they altered their Articles of Association on the previous Wednesday, and they could not expect people from Aberdeen to be running down to monthly meetings at Torquay to arrange the Congress, or *vice versa*. So that naturally a tremendous number of people ceased to take very much interest in the Provisional Committee; it therefore boiled down to a comparative few, but those comparative few in that locality had put in a tremendous lot of good, sound work. Had they not done so, they would not have had the successful Congress that they had had.

He would make especial reference to the work of the Chairman, Mr. Hogben, of Folkestone. (Applause.) Mr. Hogben had been untiring in his efforts, and they were extremely grateful to him for all he had done. Close on his heels came Captain Gillard. (Applause.) As many of them knew, Captain Gillard was personally instrumental in obtaining permission of the Golf Club for the tournament, and for getting the Club open to members of the Congress for the week. He also made the arrangements with Messrs. Pratt and Company with regard to the racecourse, and also those for the surgical demonstrations. It did not take long to say this, but it meant an enormous amount of work, and the Congress was tremendously indebted to Captain Gillard for all he had done in that respect. (Hear, hear.)

Last, but not least, they came to the Local Hon. Secretary. (Applause.) The Association had been fortunate in past years in securing good local secretaries, but he did not know if it had ever had a better one than they had had in Major Dalling. He had stuck to his work, and it was a big work, right nobly. The speaker dared say there had hardly been a day, except for Sundays, on which Mr. Knight and Major Dalling had been talking on the telephone and chasing the speaker, and so he knew the work Major Dalling had put in, and no-one could have done better, he was sure; indeed, to him largely was due the success of the Congress. (Applause.)

The speaker therefore put that resolution in perhaps stereotyped form, that they proposed a very hearty vote of thanks to the Provisional Committee, with especial reference to the work of the Chairman, Mr. Hogben, Captain Gillard, and the Local Hon. Secretary. (Applause.)

Mr. Jackson Young said he had a very pleasing duty to perform, and that was to propose their most sincere and heartfelt thanks to the Presidents and Vice-Presidents of the Sections, the recording secretaries, the readers of papers and the openers of discussions, operators and demonstrators, and those who had rendered valuable service with the operations and demonstrations, and also to Major-General Sir John Moore for the public lecture on "What the Veterinary Profession is Doing for Your Animals," and Professor Hobday for the film display in connection with that lecture. He would like that vote of thanks to be sincere and heartfelt.

They had had a wonderful Congress, and the success of that Congress was in very large measure due to the gentlemen who were mentioned in that vote of thanks. It had been a great pleasure for them all to attend that Congress, and he thought each and all of them would return to their various destinations with very happy and pleasant reminiscences of Folkestone. (Hear, hear.)

That was not his first visit to Folkestone. He was at Folkestone ten years ago at a Congress, and when it was decided to come to Folkestone again this year, he made up his mind he would attend it if his health allowed him. They had had an excellent Congress and it had afforded a fine example of team work. Everyone had done his bit, and done that bit well. He therefore proposed that a very hearty vote of thanks be given to those persons. (Applause.)

The President said he was sure that was carried unanimously.

Mr. Gooch said he considered that Congress was most important to the outside world, and if they had no Press they would have no publicity given to their work, and that Congress would only rest with those who attended it. They had had good reports in the Press from their local Press representatives, and he was sure they were deeply indebted to them for coming so regularly to attend not only their meetings, but also their sectional meetings as well. He therefore had great pleasure in moving a hearty vote of thanks to the local Press and also to their own Press, for the way in which they had carried out their work. (Applause.)

The President said it was now his unpleasant duty—the only unpleasant duty he had had to perform during the week—to declare that Congress at an end. He had described it as an unpleasant duty because indeed he felt it to be so. They were now thoroughly in their stride, and he would like to go on for another week, but perhaps that was just a personal feeling. ("No, No.") However, officially he had to declare that Congress at an end, and he once again thanked all those who had attended.

It was very difficult to know exactly the number of people who had attended that Congress, but they had not all signed the attendance book, and some came on Monday and left on Tuesday, and others came on Wednesday and left on Thursday, and so on, and so people had kept coming and going, and it was impossible

to keep a correct record. But he did not think he would be overstepping the mark when he said that about 300 to 310 people had attended that Congress during the week, and he thought that was an extraordinarily satisfactory number. (Applause.)

As a little personal note, might he ask that all those who had attended that Congress would attend the Congress at Llandudno next year, and not only attend themselves, but bring another friend each with them so as to try to double their numbers. He had tried hard to make that present Congress a record one, but having to go on, he would have to try to beat his own record. (Applause.)

POST-CONGRESS MEETING OF COUNCIL

The first meeting of the Council elected to officiate for the year 1932-33 was held in the Town Hall, Folkestone, on Saturday, August 13th, immediately following the adjourned Annual General Meeting.

The President (Lieut.-Colonel P. J. Simpson) occupied the chair, and in addition the following were present:—Mr. H. Bell, Professor J. B. Buxton, Professor J. F. Craig, Messrs. F. A. Davidson, P. F. Dolan, R. Hudson, Major J. G. McGregor, Major-General Sir John Moore, Captain S. J. Motton, Major R. H. H. Over, Captain R. Simpson, Messrs. A. Thomson, W. Tweed, Dr. A. W. Whitehouse, Mr. T. Wilkinson, Mr. W. Woods, Professor G. H. Wooldridge, Dr. W. R. Wooldridge, Professor J. G. Wright, together with the Hon. Secretary (Mr. J. W. McIntosh), the General Secretary (Mr. F. Knight) and the Association's Solicitor (Mr. C. O. Langley).

An apology for absence was received from Mr. R. Lovell.

STANDING COMMITTEES FOR 1932-33

It was agreed to appoint the various Chairmen of existing Standing Committees as a Committee to nominate representatives for Standing Committees for the current year, and to submit names to the next meeting of Council.

COMMITTEE ON THE CENTRALISATION OF THE SLAUGHTERING OF ANIMALS

A communication was read from Mr. A. Gofton, Chairman of the Public Health Section of the Congress, relative to the above Committee appointed by the Economic Advisory Council. It was agreed, after discussion, that the Secretary should make enquiries with a view to the Association offering evidence should it find itself in a position to do so.

Papers Presented to Congress

Limitation of space precludes the publication in this issue of more than two of the papers presented to Congress, together with the discussions upon them, in the order in which they were considered. This special Congress Number therefore contains the contribution to the Veterinary Medicine and Surgery Section "Recent Advances in Therapeutics," by Mr. Arnold Spicer, F.R.C.V.S., of Oxted, and that to the Public Health Section "The Relation of Meat and Meat Products to Bacterial Food Poisoning in Man," by Mr. R. Lovell, M.SC., M.R.C.V.S., D.V.S.M., of London.

Future numbers of the *Record* will contain the following papers, with reports of discussions:—"Anærobic Infection of Sheep as seen in the Romney Marsh" (Experimental Pathology Section), by Mr. A. D. McEwen, B.SC., M.R.C.V.S., Wye; "A Comparison of the Systems of Meat and Milk Inspection in this Country and Abroad" (Public Health Section), by Lieut.-Colonel T. Dunlop Young, *O.B.E.*, M.R.C.V.S., D.V.S.M., London, and Major D. S. Rabagliati, *O.B.E.*, B.SC., F.R.C.V.S., D.V.S.M., Wakefield; "The Diagnosis of Gastric and Intestinal Diseases of the Dog and Cat" (Veterinary Medicine and Surgery Section), by Professor J. G. Wright, F.R.C.V.S., London; "Clinical Examination of the Cow's Udder" (Veterinary Medicine and Surgery Section), by Captain R. Simpson, F.R.C.V.S., D.V.S.M., Carlisle, and "Vaccination against Bovine Contagious Abortion and the Relation of this Disease to Undulant Fever in Man" (Experimental Pathology Section), by W. Horner Andrews, D.SC., M.R.C.V.S., Weybridge.

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No. 1.—RECENT ADVANCES IN THERAPEUTICS*

ARNOLD SPICER, F.R.C.V.S.
Oxted, Surrey

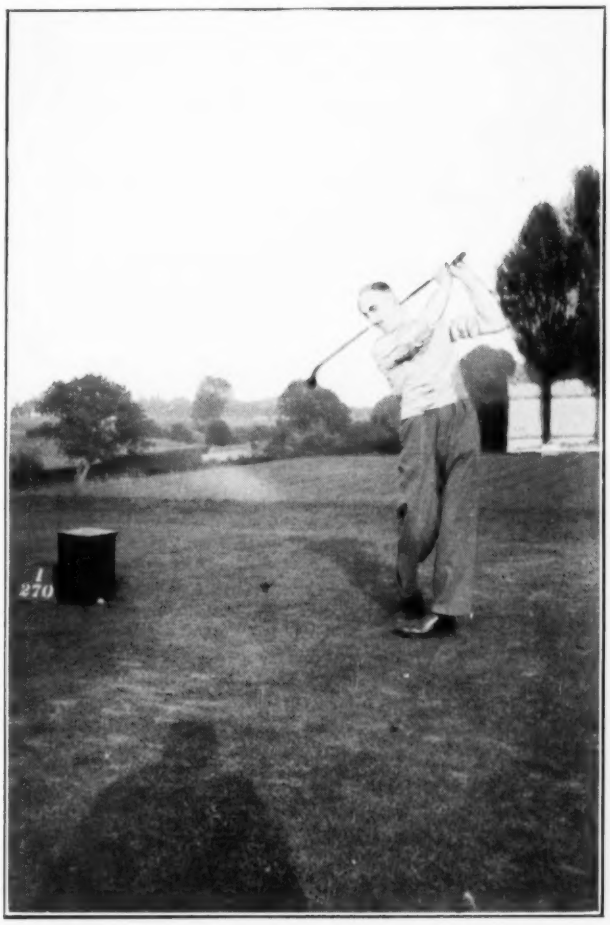
At the first glance this appears to be a subject on which there is a great deal to be written, but on reference to a dictionary to see the real meaning of the word "Therapeutics" things appear in a different light. The definition is as follows: "That branch of medical science which considers the application of remedies as a means of cure." This, of course, cuts out all the recent work on immunology, the more recent work on methods of diagnosis (such as tuberculin and johnin) any new methods of administrating medicine and local anæsthetics. Distemper vaccination has been brought in because it is so

* Presented to the Veterinary Medicine and Surgery Section of the N.V.M.A. Jubilee Congress, Folkestone, August, 1932.

5.—Quite content with the way things are going—the Hon. Congress Secretary and his able assistant (Major Dalling and Miss Arnold) pose with Mr. F. Trewin and Mr. J. McIntosh.

6.—The President and Mrs. Simpson await the result of the Golf Competition, the trophy for which is provided by him.
Included in the group are Mr. Gofton (Edinburgh), Professor Mitchell, Mr. Harry Locke and Mr. J. McIntosh.

7.—Sir Weldon Dalrymple-Champneys, Bart. (the first delegate ever sent to an N.V.M.A. Congress by the Ministry of Health), chatting to Sir John and Lady Moore. Mr. Wilkinson, of Lanchester, Durham, is seen in the background.



8.—The winner of the golf trophy driving off the first tee.
Mr. W. S. Gordon, of Moredun.

closely linked up with the new distemper serum which is curative. Avertin should not have been mentioned, but it is an entirely new anæsthetic and has therefore been included.

One important advance in therapeutics of recent years, from an economic point of view, is the discovery that carbon tetrachloride and preparations of male fern will destroy flukes in the livers of sheep and cattle.

It was about 1917 that Professor Marek demonstrated the properties of chemically-purified filicin after lengthy research. Until that time there was no remedy for fluke in sheep and cattle and in bad seasons the losses were enormous.

Danistol has now been tested in many severe epidemics and can be looked on as quite reliable and practically 100 per cent. efficient. Sheep that are badly infested and in very poor condition can be safely treated with Danistol; they make good recoveries and do not appear to suffer any set-back from the treatment.

Danistol is said to have a very important advantage over other remedies, in that it will kill all the immature as well as the older flukes, and is non-poisonous for sheep and cattle. One great disadvantage is the expense and for that reason it has been largely superseded by carbon tetrachloride, but if one realises that only one dose is required and therefore the sheep only have to be handled once, the cost of a good deal of time and labour can be set against that item.

Carbon tetrachloride was largely introduced to the veterinary profession, as a cure for distomatosis, by R. F. Montgomerie, who carried out many experiments on experimentally-infected Welsh mountain sheep. He found that this drug did not touch the parasites until they had been in the sheep for four weeks; after that date it killed nearly all the parasites. To be really successful with carbon tetrachloride it is necessary to treat the sheep at least every two months during the autumn and winter, and some farmers make a practice of dosing their sheep three times every year during the dangerous period. Carbon tetrachloride is dangerous to sheep under certain conditions, but these conditions are not definitely known. The best results seem to be obtained with mountain and moorland sheep; it is more dangerous for sheep in low-lying districts, more especially if the sheep receive artificial food, and under such conditions heavy loss may result from its use.

A great deal of controversy has arisen as to which is the better of the two drugs and on comparing them it may be said that carbon tetrachloride is very much cheaper; it also appears to have a definite anthelmintic action on some of the alimentary nematodes. It does not kill the immature parasites. Under certain conditions, not accurately established, it certainly kills a percentage of the sheep treated and it is definitely still more dangerous for cattle.

Danistol, on the other hand, is very expensive and has no action on any of the alimentary nematodes. One dose is sufficient because it kills both mature and immature parasites. It is perfectly safe to use under any conditions.

To quote one writer of considerable experience: "I gave carbon tetrachloride an extensive trial in the early part of last season and found that, if given in the doses recommended as safe, it had little or no effect on either the immature or adult parasites, whilst if the dose given was sufficiently strong to affect the parasite it was dangerous to the patient."

Over 7,000 sheep, the property of about 170 owners, were treated with Danistol with excellent results. The great majority of these had been treated with carbon tetrachloride which, as previously stated, failed to check the invasion.

One of the outstanding questions appears to be whether Danistol does definitely kill the immature flukes. It is admitted that carbon tetrachloride does not do so, but the supporters of that drug say that Danistol does not do so either and point to the number of cases where a distomatosis breaks out again after treatment with Danistol. The supporters of Danistol say that those are cases of reinfestation and in support of that theory three samples of hay were tested on sheep that had been kept in the veterinary clinic for three months previously and were shown by microscopical examination of the fæces to harbour no parasites. The feeding tests were carried out for eight days with the result that one sample of hay was proved to be clean but the other two samples were shewn to contain live encysted cercariæ and produced a heavy infestation in the experimental sheep. The experiment proved that in wet seasons hay containing encysted cercariæ can remain infective for at least eight months and probably longer to a degree which will cause severe and even fatal infestation with liver flukes.

Within recent years important researches have been made into canine distemper. Laidlaw and Dunkin showed that the true cause of this disease is an ultravisable virus, thus confirming the work of Carré, and finally settling the vexed question of the relationship of the disease to the micro-organism isolated by various workers in different parts of the world. Laidlaw and Dunkin showed also that a highly efficient method of immunisation against the disease could be practised. It is the injection of vaccine consisting of a saline suspension of formalinised dog spleen rich in virus followed in a week's time by a small dose of living virus in the form of an emulsion of infected ferret spleen. The immediate results recorded from the use of these products were highly satisfactory and it has since been shown that the immunity so produced is lasting in character. When the making of these products was undertaken on an extensive commercial scale it was shown that certain alterations in the Laidlaw-Dunkin technique were necessary, the chief of which was

the producing of virus in a stable form. It appears to be impossible to issue virus on a large scale as a wet emulsion because of the rapidity with which it loses its potency. Laidlaw and Dunkin showed that the virus containing tissue dried to a powder retained its potency over long periods and Dalling records that—"vaccine followed by dry virus is at least 99 per cent. efficient as an immunisation method for canine distemper." He holds that, at the present time, this is the safest and most satisfactory method for immunising dogs against distemper. The method has the serious drawback that it is necessary to isolate dogs under treatment during the whole course of immunisation and it was therefore with considerable relief that the second method devised by Laidlaw and Dunkin, *viz.*, the serum-virus simultaneous method, was received. Laidlaw and Dunkin showed that a hyperimmune serum could be prepared in dogs, that such serum prevented the development of symptoms of distemper in dogs injected with virus when the serum and virus were given together simultaneously, or within a short period of each other and that the immunity produced was of a high order. The great advantage of using this method is that immediately following the simultaneous inoculation the dog is rendered immune and thus isolation is not necessary. The method is being used extensively now, dried virus and serum being employed. Dalling records, however, that the results do not appear to be so highly satisfactory as those obtained by the former method.

The production of hyperimmune serum in dogs has been followed by its production in horses. My own opinion of the value of hyperimmune serum, after using about sixty doses all through last winter, is that it has proved specific and I have found it of great value, especially in dogs in the early stages of distemper, in which it quickly causes a shortening of the course of the disease. My experience of its use in dogs affected some little time has also been good, though the longer the disease has existed the longer it has taken to clear up.

Serum is also very valuable in preventing the development of distemper in dogs which have been exposed to infection, *e.g.*, at shows, etc., if given within a day or two of such exposure.

The latest development in connection with distemper is the preparation of hyperimmune serum concentrated antibody. This was first done by Laidlaw and Dunkin and there are indications that it may be available commercially at an early date. Wright speaks highly of this preparation.

Another preparation introduced to this country is a methylarsenate of copper designated Monekil, and it is claimed that it will kill tape worms and also all stomach worms. This preparation, introduced by Theodore Vaida, PH.D., was described in 1929 in *The Journal of Comparative Physiology and Pathology*, Budapest.

It is insoluble in water, yet easily suspended, soluble in mineral acids, and pale green in colour. On reaching the fourth stomach, this combination is only acted upon in stages by the hydrochloric acid contained in the digestive juices, with the result that no poisoning whatsoever occurs after the absorption of therapeutic doses.

Following the administration of this preparation, tape worms were evacuated dead and were mostly coloured brown, having taken up the colouration of the fæces. Diarrhœa symptoms occurred as a result of local irritation of the mucous membrane, but the expulsion of dead worms was accelerated thereby. Usually expulsion is over within two or three days.

If this account of Monekil should prove correct, its economic importance will be tremendous, and a very limited trial appeared to confirm the above statements. It is definitely stated that this preparation has no effect on fluke or lung worm.

Tri-brom-ethyl-alcohol ($C.Br_3CH_2OH_1$) generally known as Avertin, was first produced by Willstatter and Duisberg by yeast fermentation of bromal. Erickholtz, in 1927, studied its pharmacological action and introduced it into therapeutics.

Avertin was introduced to the veterinary profession by Professor J. G. Wright by a short note in the *Record* somewhere about March, 1930, and by a paper presented to the Central Division in May of the same year, and on that occasion he gave an extremely interesting demonstration of its effects on the cat and dog.

So far it has not proved of any real value for the larger animals and the expense for them is prohibitive.

At that time Professor Wright put the dose for the cat at 0·3 gms. per kilogramme bodyweight and for the dog 0·6 gm. used in the fluid form of Avertin, which comprises tri-brom-ethyl-alcohol held in solution in amylene hydrate.

Professor Wright seemed to have the greatest success with Avertin in anæsthetising cats, but several practitioners have had accidents when using it and have been more successful with dogs. Perhaps one of the greatest objections to its use in cats is the length of time which they remain in a state of narcosis; this may be an advantage after serious operations, but is a great disadvantage for minor ones.

In dogs one usually gets a period of general anæsthesia long enough for most operations and then the animal comes round quickly. All Professor Wright's preliminary work was carried out with the rectal method of administration, but this had its disadvantages: *viz.*, it required a large dose and there was considerable leakage of dirty fluid shortly after the animal was anæsthetised.

It was afterwards suggested that Avertin should be given by the mouth through a probang and by this method I believe Professor Wright has been able to reduce the dose to 0·2 gm. in the cat and

0·3 in the dog. The method of oral administration is quite simple in the dog when a gag is used, but will require strength and skill in the case of the cat.

One advantage of oral administration is that if necessary the probang can be passed again and the fluid withdrawn.

Avertin is hardly likely to come into very general use in veterinary practice because of the attention to detail that is required, but in operations on the head, eyes, mouth and throat it will always take preference over chloroform and it should be extremely useful to the single-handed practitioner because he can first anæsthetise his patient and then give the whole of his attention to the operation.

Manganese was not used in medicine until Dr. Crooks produced it in the colloidal form, and its use was confined to the medical profession until about 1929, when Dr. Huxley used it in the treatment of infectious mastitis due to streptococci and staphylococci. Previous to that date it had been used as manganese butyrate, but only in the treatment of interdigital cysts in dogs.

Following Dr. Huxley's experiments several veterinary surgeons have employed it in the treatment of different diseases in cattle and dogs with very beneficial results. It appears to be a complete failure in the treatment of infectious mastitis, for which Dr. Huxley first tried it, but for ordinary cases of mastitis it is the only agent that can be relied on to give definite results and sometimes it effects a cure with remarkable rapidity. It will either cause complete resolution at once or else effect a cure by causing abscess formation until all foci of disease have been cleared up. It has no effect on acute cases such as are seen in summer mastitis and in acute febrile diseases. It is doubtful whether it is wise to use it when there is a high temperature as it does not appear to benefit the patient and may even do harm, but should be reserved for cases that are more of a chronic nature.

It apparently takes the place of poultices and is very useful in bringing cases of foul in the foot, or felon, to a head and will produce a free discharge of pus.

It is extremely useful in some cases of scour in calves and in diarrhœa in dogs. It gives good results in the treatment of follicular mange, clearing up the abscesses very quickly, and probably gives the best results in conjunction with one of the sulphur dressings.

Some veterinary surgeons have been troubled with abscess formation after the manganese injection and it is difficult to explain why. It would appear to be unwise to inject it into the biceps femoris muscles in grown animals because in the first place, it is an area liable to be smeared with fæces at any moment and also because there is a certain amount of risk from bruising when the cow lies down, particularly on bare floors.

Those cases that arise in the gluteal region are probably due to some fault in technique. As the skin over the gluteal muscles cannot be picked up, the needle has to be pushed straight in, and to avoid too much pressure it should be twisted in a half circle backwards and forwards until it penetrates the skin and then pushed through to the deeper layers of the muscle. When the needle is withdrawn a finger should be placed on either side of it to prevent the skin lifting and the needle should be again twisted. It is most important that none of the manganese should get between the skin and muscle.

Subcutaneous injections of normal saline have been used by the medical profession for many years, but, except on some odd occasions, it does not appear to have been used by the veterinary profession much before 1929.

During 1928 experiments were commenced to prove what effect it would have in the treatment of fits in distemper in conjunction with potassium bromide, and in conjunction with insulin in the treatment of chorea. The results were very encouraging and it was then tried in the treatment of hysteria, again with very good results. It is of course extremely useful after severe hæmorrhages in restoring the fluid contents of the blood, though intravenous injection would give quicker results. The action of the normal saline in the treatment of the nervous sequelæ in distemper and hysteria is not settled, but if MacDonagh's theory as to the nature of disease should prove to be correct, its effect can be explained by the action it has of breaking down the agglutinated protein particles to their normal size and thus removing the block in the capillary circulation of the brain. It has to be remembered that normal saline is no cure for distemper or hysteria but only cures a brain of symptoms produced by the virus which causes the disease and if the protective agents of the animal are not able to obtain the upper hand of the virus the symptoms are liable to recur. The treatment of fits in distemper by the new distemper serum has largely outbid normal saline for that purpose. Normal saline is also useful in the cases of paralysis arising from distemper and those other cases which so frequently occur in Dachshunds and other dogs arising from, at present, unknown causes.

It is a specific in cases of eclampsia in bitches, several cases of which appear to have been lately referred to as milk fever and have been treated with oxygen.

Several variants of the saline treatment are now used, the most useful probably being a 10 per cent. solution of glucose which, in the treatment of milk fever, has definitely proved itself more efficient than the saline. Another is the formula supplied by Dr. Henry Dryerre to Mr. Blount, which is isotonic, and similar in composition to that of blood plasma. This is very useful but it

should always be made with distilled water, otherwise it throws out of solution any calcium oxide that may be in solution and there is a tendency for it to form thickened areas or even abscesses. Precipitation of the calcium is not due to the glucose.

From 1923 to early in 1925 a great deal of experimental research was carried on by Hayden and Sholl, and Dryerre and Greig in an endeavour to discover the cause of milk fever, and a little later in 1925 Little and Wright made the extremely important announcement that in cases of milk fever there was an actual deficiency in the calcium content of the blood.

This was taken up by Dryerre and Greig in an endeavour to show that calcium deficiency was the actual cause of milk fever and that by injecting a solution of calcium oxide one could overcome this deficiency and cure the disease.

Many difficulties had to be overcome because of the tendency of calcium to cause abscess formation when injected subcutaneously and because it is not an easy thing to give an intravenous injection to a cow suffering from milk fever. After a good many experiments calcium gluconate "Sandoz" was produced and it was possible to give subcutaneous injection with a fair degree of safety, but still there was a considerable number of accidents, and it was only after considerable experience in the use of the drug that it was proved to be safe to use if great care and attention was given to the dissolving of the calcium gluconate and to filtering it carefully so that no undissolved particles were injected under the skin. It has also been shown that large quantities of a dilute solution give much better results than small quantities of concentrated solution.

It is highly improbable that calcium gluconate injection will ever replace inflation of the udder as a routine treatment for milk fever, for several reasons, amongst which are: one so frequently has to resort to inflation of the udder after using the calcium treatment; the danger of abscess formation; the length of time occupied in preparing the solution and cooling it to the correct temperature—if the solution is prepared beforehand there is always the danger that it will separate out.

Another point is that some practitioners think the calcium treatment is founded on error.

Is calcium deficiency the cause of milk fever, or does milk fever cause the calcium deficiency?

If calcium deficiency causes milk fever and allied conditions, where does the calcium go? It is suggested that it is excreted in the colostrum because there is a rather higher percentage of calcium in colostrum than in ordinary milk, but the cow is mostly "dry" for some time before she calves and has every opportunity of storing up a supply to meet all needs, and cows which are heavily fed on minerals all the year round should not get milk fever, but they do. Also, first and second calvers yield colostrum and yet are rarely affected with milk fever.

One of the most convincing arguments against this theory is that cows will recover from milk fever some time before the calcium content gets back to normal and it may even remain as low as when the first sample of blood was taken at the commencement of the attack.

It is suggested that inflation of the udder has some effect on the calcium content of the blood. It is difficult to see how it does so and experiment shows that it does not have that effect on the blood of normal cows.

It would be extremely interesting if a census of all veterinary surgeons could be taken on the following conditions: in future you will only be allowed to use one treatment for cases of milk fever—inflation or calcium therapy. Which one will you select? The number of those selecting inflation would be overwhelming.

A great deal of experimental work has been done during recent years in the feeding of minerals to animals and fowls and the results definitely prove that to keep animals in health under the stress of modern conditions minerals are an absolute necessity.

The present-day farmer expects larger and still larger yields from his animals and the food supplied by nature is not sufficiently concentrated to allow the animals to obtain the mineral requirements for this forced production and it is therefore necessary to supply them artificially. In the first place it has been proved by Sir A. Theiler that the disease called lamsiekte in South Africa is definitely due to a deficiency of phosphates and disappears as soon as bone meal is fed to the animals, proving that in a mixture of minerals the system is able to select what is required. This is a case where the soil is definitely lacking in certain minerals and livestock farming is only possible when the deficiency is made good.

There is another disease in South Africa, occurring among sheep, called domsiekte, which is cured by the use of bone meal, and this material also prevents the disease. As this disease was not seen before 1924 it would seem that the soil has now become exhausted, probably due to overstocking.

Some soils in America are also lacking in iodine and farming can only be successful when this is supplied.

In this country we have no examples of the above and if animals were left in their natural state minerals would not be required: it is the forced production and intensive farming that is responsible for the need of minerals in this country and also exhaustion of the soil by constantly taking the same products off the land year after year and not replacing them. For this reason feeding minerals has become very general and nearly all cake manufacturers include about three pounds of minerals to every hundred pounds of cake or meal.

It is astonishing the amount of minerals cows can eat without suffering any ill effects. Cows giving six to eight gallons of milk are given from twenty-four to thirty-two pounds of concentrates which, on this scale, will contain from twelve to sixteen ounces of minerals, and they derive great benefit from them, and are constitutionally much stronger.

It has been suggested that a great deal of the sterility in dairy herds is due to lack of minerals, though that remains to be proved. Other diseases attributed to mineral deficiency are:—bent-leg in sheep in Ireland; pica or depraved appetite; reduction of the size of litter, in sows; a high mortality in the young pigs; cramp in pigs, or so-called rheumatism.

It has also been suggested that Johne's disease is due to soil exhaustion and that the weakened condition of the cow allows the bacillus to obtain a foothold when otherwise it would not be able to do so. This will be proved in course of time as, owing to the inclusion of minerals in practically all feeding stuffs, Johne's disease should begin to decrease.

Omnadin, a non-specific vaccine composed of various fats and lipoids as well as protein substances derived from bacteria, was introduced several years ago.

It consists of three groups of immunising substances: (1) reactive protein from the metabolic products of non-pathogenic schizomycetes; (2) bile lipoids; and (3) neutral animal fats.

It protects the organism from the pathogenic agents of all acute infections and that at a time when the specific antibodies have not yet developed and are not yet demonstrable. The best results are obtained by early administration.

Omnadin was introduced to the veterinary profession almost as a cure for distemper. That idea was quickly dispelled; it did, however, prove of considerable value in reducing the temperature and allaying feverish symptoms and reducing the discharge from the eyes and nose. In that disease, where expense is no bar to its use, distemper serum has completely superseded it, but it is of considerable value in other feverish conditions and bacterial infection, often enabling the patient to make a quick recovery.

It is given either subcutaneously or intramuscularly.

Luminal Sodium is a preparation that has been used largely in the treatment of convulsions and chorea due to distemper and also to arrest attacks of hysteria. In doses of from ¾ of a grain to 1 gr. it is also useful in the treatment of vomiting and in gastritis and enteritis, producing a natural sleep and giving relief from pain. If the doses are too large and continued for a length of time it is apt to produce inco-ordination and loss of muscular control in the legs and the animal may be unable to rise: these symptoms, however, pass off without leaving any ill effects, although they may be alarming to the owner of the patient.

Odylen is another preparation about which there has been considerable discussion in the papers during recent years. It was advertised as a cure for every form of mange and particularly follicular mange; also for ringworm, eczema, mallenders, grease, scalyleg in poultry, lice, fleas and other vermin. It is a sulphur preparation and not so greasy as the usual run of sulphur dressings.

Whilst it is a very useful preparation in the treatment of follicular mange, it is certainly not a specific and is much better combined with either aricyl or collosal manganese. Also, being expensive, it will hardly take the place of the other oily sulphur dressings which are very efficient in the treatment of the other complaints mentioned.

Lice, fleas and other vermin are much better treated with other dressings which are nothing like so inconvenient and leave the skin beautifully clean.

Devenil is a preparation originated by Dr. Billington. It was put on the market as a cure for distemper and was supposed to be 100 per cent. effective if used early in the treatment of that disease. Whilst undoubtedly beneficial in treating most cases of fever arising from different causes it certainly is not a cure for distemper, even if given in the early stages. It undoubtedly helps to control temperature, which begins to fall in about ten hours after the injection, and the dog will be more comfortable and will begin to feed, but the fall in temperature is not permanent and the disease runs its full course although it may be modified to some extent.

In the more virulent and complicated cases of distemper it does not appear to be of any benefit whatever.

The last few preparations are mentioned as typical of a number of remedies that are continually being introduced. Many of them fade out after a very short time, others last longer and only a few survive definitely.

Those that survive are nearly always preparations about which all the details are known to the profession and there is nothing secret about them.

Formalin has been used in the treatment of several conditions such as Johne's disease, and the treatment of uterine troubles, without any very definite results; but sometime prior to 1923 Imrie suggested that it should be given intravenously in the treatment of purpura hæmorrhagica and some of the results of this treatment were published by Professor McCunn in the *Veterinary Journal* in 1923-1924, and it was the fact that hæmorrhagic enteritis in dogs in some ways resembled purpura in the horse that led the latter gentleman to use it on dogs.

The dosage used was 5·15 m. of the 40 per cent. formaldehyde diluted in from 2 to 4 c.c. of boiled tap water and Professor McCunn claims 100 per cent. recoveries.

XUM

The injection has an immediate effect, causing acceleration of the respiratory and circulatory systems and uneasiness for 20 or 30 minutes.

The idea is protein shock therapy and Professor McCunn believes that formalin acts by breaking down the blood cells and so liberating protein.

J. J. Davies has tried this treatment for Stuttgart disease, but the results are not so definite, the subacute form being the most amenable to treatment. More than one injection is always necessary—usually three at twenty-four hour intervals. He has also tried formalin in a form of gastro-intestinal catarrh in which the odour of the fæces resembles that of the hæmorrhagic form. This may only be a mild form of the latter disease, but it responds to formalin injections.

Probably the first practitioner to try the effect of heat baths on animals was Charles Hartley, senior, who had a bath made for applying the treatment to horses. It was fitted with electric bulbs and the temperature could be raised to 160° or 170°. Since that time the science of actinotherapy has progressed enormously and for use in the treatment of disease we have the ultra-violet rays and the infra-red rays.

Opinion as to the real value of actinotherapy seems to vary enormously. By some, ultra-violet rays are condemned as useless, whilst others would use them for the cure of all bodily ills.

There is no doubt that in certain cases infra-red rays are of great value, particularly in those nervous cases where we have paralysis, hyperæsthesia and general excitement. They also have a soothing action in many conditions which cause pain, such as enteritis, neuritis, rheumatism, etc. The therapeutic value of infra-red rays is said to be based on their powers of penetration, but this appears to be doubtful and it may only be the effect of the heat on the skin dilating the vessels and drawing blood from other parts of the body. This movement of the blood probably effects the protein particles in some way or another.

A great deal of experimental work is continually being carried out with ductless gland products and extracts from the placenta, stomach, duodenum, testes, ovaries, etc. At first, one was led to hope for much, but from the general practitioner's point of view their use is extremely disappointing.

One set of authorities say that thyroid is the only extract that can be taken by the mouth without its being destroyed in the stomach and that the others must all be given by hypodermic injection. Others give all and sundry by the mouth and claim good results.

The most obvious and natural use of gland products is in the treatment of diseases due to insufficiency or absence of the glands themselves, and on the whole the veterinary profession has very little of diseases of that type to deal with.

Parathyroid and extract of spleen have been largely talked about as cures for chorea and grease, but a prolonged trial has proved that they are largely failures.

Discussion

The foregoing was the first paper to be discussed by Congress, and following the official opening of the Conference at the Town Hall on the morning of Monday, August 8th, a considerable company stayed for this purpose.

Professor G. H. Wooldridge (London), Vice-President of the Veterinary Medicine and Surgery Section, occupied the chair, and immediately called upon Professor Greig to open the discussion.

Professor J. Russell Greig said:—

I am honoured in having been invited to open the discussion on the paper presented by Mr. Spicer, entitled "Recent Advances in Therapeutics." Although it is now more than two years since my activities have been removed from the province of general therapeutics, I accepted the invitation largely, I am afraid, because I believed that my task would be a pleasant and a simple one. A study of Mr. Spicer's paper, however, has brought me to realise that were I to make it my text to-day, my task, whatever else it might be, would not be simple. Mr. Spicer's contribution to the proceedings of this great National Congress contains so much to which I take exception that I am persuaded that, in the short time at my disposal, I can more profitably confine myself to a discussion of that section which deals with Calcium Therapy. No doubt, those who follow me will deal with other aspects of the paper with a greater degree of authority than I can.

I would, however, here interpose a matter for your consideration.

We possess an advantage over our confrères in Hominine Medicine in that we are able, by direct experiment, to determine the pharmacological actions which the more potent drugs exert upon our patients, and experiments designed with the ultimate object of obtaining a safe and effective system of dosage are now being undertaken at the Moredun Institute. But the difficulty remains that no uniform system of posology is recognised by the veterinary profession; we have no officially recognised collection of drugs and their preparations. In short, we have no Pharmacopœia. The need for a British Veterinary Pharmacopœia has been borne in upon me as the editor of a text book on Materia Medica, and I feel that the British Veterinary Association of the future could render a signal service to the advancement of veterinary therapeutics if they were to bring the matter before the Royal College of Veterinary Surgeons with a view to that body's issuing a Pharmacopœia or, alternatively, by themselves compiling a British Veterinary Pharmaceutical Codex.

The paragraph with which Mr. Spicer introduces his discussion on calcium therapy contains several inaccuracies but, since this text

refers to purely historical matter, it is of little importance to the subject under discussion. I would, however, enter my strong dissent to his statement that Dryerre and I attempted the cure of milk fever by the injection of calcium oxide. We did not. To inject quick-lime, intravenously or subcutaneously, would certainly be novel and original, but would surely constitute a highly dangerous procedure.

Mr. Spicer says:—"It is highly improbable that calcium gluconate injection will ever replace inflation of the udder as a routine treatment for milk fever for several reasons, amongst which are:—One so frequently has to resort to inflation of the udder after using the calcium treatment; the danger of abscess formation; the length of time occupied in preparing the solution and cooling it to the correct temperature; if the solution is prepared beforehand there is always the danger that it will separate out."

Now, I have never attempted to eulogise upon the merits of this treatment, and I believe that in anything I have previously said or written on this matter, I have avoided making exaggerated claims for the worth of the treatment; indeed, nothing that I, or for that matter, anyone else, might say would determine whether the calcium treatment will, or will not, be ultimately generally adopted in practice. Time and experience alone will decide that issue. Like other therapeutic procedures which are advanced from time to time, if it be of real worth, it will live; if it be of little or no worth, it will as surely die; but I deny that after the proper application of calcium therapy, resort has frequently to be made to udder inflation. *That* is not so.

The time occupied in the extemporaneous preparation of a solution of calcium gluconate need be only short—four minutes will suffice—and solutions may be prepared with complete safety several hours before they are required for use.

But Mr. Spicer goes on to suggest that the whole treatment is founded on error and, since he proceeds to advance arguments in support of this suggestion, I must join issue with him there.

He is apparently under the impression that it is seriously contended that cows attacked by milk fever are suffering from an absolute deficiency of calcium. No! In point of fact, every cow which falls a victim to milk fever has at the time of the attack an abundance of calcium in her body, but that calcium is stored in the bones in a form which is not immediately assimilable by the tissues. Under normal conditions, and probably largely as the result of parathyroid activity, calcium is constantly being mobilised and transferred from the bones to the functioning cells of the soft tissues. Now, one-half gallon of colostrum contains as much calcium as there is present in the blood at any one time; that means that in, say, a two-gallon lactation the blood calcium has to be replenished four times from the great calcium reserves in the skeleton. It is obvious that this replenishment must be controlled by a mechanism of exquisite delicacy, but if that mechanism, represented, we believe, by the parathyroid, be unable to mobilise the calcium quickly enough, the phenomena to which we assign the name of milk fever supervene. Milk fever, then, does not represent an absolute deficiency of calcium in the organism, but an acute deficiency of calcium in the blood due to a failure of the mobilisation and transference of calcium from the skeletal reserves to the blood.

Mr. Spicer says:—"It is suggested that inflation of the udder has some effect on the calcium content of the blood." It is not merely suggested; it is proved that mammary inflation in milk fever raises the blood calcium, and numerous experiments have shown that the rise in the blood calcium which follows mammary inflation bears an intimate and direct relationship to the progress of the curative response.

It is true, as Mr. Spicer says, that the affected animal may rise to her feet and show evident signs of recovery before the calcium concentration in the blood has reached normality; but, again, although the concentration of blood calcium is certainly an index to the concentration of calcium in the functioning cells of the fixed tissues, in acute hypocalcæmia the need of the functioning tissue cells for calcium is greater than that of the blood, and it is quite conceivable that during recovery from milk fever, although the blood calcium may show a concentration of, let us say, 7·5 mgms. per cent., the tissue calcium, if it could be estimated, would be found to have reached a concentration of 9 mgms. per cent.

That inflation of the udder will have little or no effect upon the blood calcium of *normal* cows I am quite prepared to believe; indeed, Mr. Spicer had blood calcium estimations carried out by us at the Moredun Institute for the purpose of determining this point. We have found that mammary inflation caused a rise of 10 per cent. in the blood calcium of normal ewes; but any excess of calcium above normal is so quickly excreted by the kidneys and bowels that it is a matter of extreme difficulty to raise the calcium above the normal level for any length of time.

There is every justification for the belief that the immediate cause of the symptoms of milk fever is an acute calcium deficiency in the blood and soft tissues, but if I were asked the cause of that deficiency, I should have to reply: "I do not know." I could offer the plausible explanation that it is due to parathyroid dysfunction, but I have no proof; but if I could advance unassailable proof that that were so, it could in turn be asked: "What is the cause of the parathyroid dysfunction?" If it could be

XUM

demonstrated that that hypothetical parathyroid dysfunction were due to, say, a deficiency of Vitamin X, again the question could be asked: "Yes, but what is the cause of the deficiency of Vitamin X?" Truth is infinite, and the discovery of one moiety of truth leads but to further questionings.

But I repeat there is ample evidence that the immediate cause of milk fever is an acute calcium deficiency in the blood and soft tissues. In every case of milk fever the calcium is abnormally low; the degree of hypocalcæmia corresponds with the severity of the symptoms; inflation of the udder is attended by a rise in calcium which corresponds with the disappearance of the symptoms; the injection of a simple calcium base brings about the rapid and complete cure of the disease. If acute calcium deficiency be not the immediate cause of milk fever, these facts, I submit, are inexplicable.

Stress has been placed upon the danger of abscess formation in the application of the subcutaneous calcium treatment. In a recent report published in the *Veterinary Record* a practitioner described his experience of the subcutaneous calcium treatment in 15 cases of milk fever. In these 15 cases he obtained nine successes, in so far that the cows made a recovery, but five of these cases were mild and it may be presumed that they might have recovered spontaneously. Four cases completely failed to respond to treatment. Many, in fact the majority, developed large swellings, abscesses, gangrenous sloughs and, indeed, as a result, one died and one had to be destroyed. Sepsis and sloughing, gangrene and stench, death and destruction. What a record! Compare with this the recently published experience of two other practitioners. Mr. Hepburn, of Aberdeen, publishes the record of 335 consecutive cases of milk fever successfully treated by calcium alone. At the commencement of this series he encountered seven occurrences of local abscess formation, but in each case he admits that the solution contained undissolved particles of the calcium salt and was injected cold. Since ensuring that the calcium was in complete solution before injection, not a single case of abscess formation was encountered. Mr. Golledge, of Trowbridge, reports 245 consecutive cases without a single instance of abscess formation: a total in these two reports of 580 cases of milk fever successfully treated by calcium injection alone. The treatment in the hands of these practitioners, and in the hands of many others, has become accepted as a routine curative procedure of specific efficacy.

Some two years ago we devised a method for the prevention of milk fever in those cows which were particularly susceptible to attack. The method consisted in the subcutaneous injection of calcium gluconate immediately after calving and repeated after an interval of 20 hours. From a number of reports which I have received, it would appear that such a procedure is of distinct preventive value.

Calcium therapy has also proved specific in the treatment of transit tetany in mares and in lambing sickness in ewes, conditions due to acute calcium deficiency. I have no information upon the blood calcium concentration in parturient eclampsia in the bitch and sow, but clinical reports suggest that the pathology of these conditions is also allied to that of milk fever in that calcium therapy proves a specific remedy.

The generic name "staggers" has been applied to a number of distinct pathological entities in cattle.

Much work has yet to be done before the precise pathology of these several conditions can be determined, but a considerable proportion of such cases respond to calcium therapy.

I would emphasise here what I consider to be a few of the more important points in the preparation of calcium for injection. It is highly desirable that the technique be simplified as far as possible. Recent reports indicate that it is unnecessary to boil the solution previous to injection. I feel that it is desirable to boil the solution if only to ensure its sterilisation, but the solution can be quickly prepared by simply stirring up the calcium gluconate granules in a vessel with boiling water. I have found that, prepared in this way, a perfect water clear solution can be obtained, and it would thus appear that it is unnecessary to filter, although, if only because it will remove extraneous matter that may possibly be present, I think it is desirable to filter.

The extemporaneously prepared solution should not be injected at a concentration higher than 5 per cent., and should be injected at a temperature *at least* that of blood heat. Mr. Hepburn injects at a much higher temperature. He believes that if the solution be injected at a temperature of 115° F., the rapidity of absorption from the site of injection is greatly facilitated.

Mammary inflation has proved of such eminent value in the treatment of milk fever that many practitioners feel loth to give it up. That is natural! Just as it was natural that their enthusiasm for chloral hydrate prevented many practitioners from immediately adopting mammary injection thirty-five years ago. But if a good treatment has a better, we must adopt that better if we are to advance in Therapeutics.

"Medicine," said Francis Bacon, "is a science which hath been more professed than laboured, and yet more laboured than advanced: the labour having been, in my judgment, rather in circle than in progression."

Those words, although written three hundred

years ago, are not without their application in medicine to-day. But it was Rabelais, I think, who said:—"The practice of medicine is but a farce played by three actors, the physician, the patient and the disease."

But the treatment of milk fever by calcium therapy is a rational treatment. and is based on scientific data. It is, therefore, no farce. The rapid curative response, especially when the intravenous route be followed, can be described as spectacular, even dramatic, although in some hands the treatment would appear to be dire and utter tragedy. In introducing and advocating subcutaneous Calcium Therapy for milk fever, I did so, not only because I firmly believed in its merits, but because I felt that its adoption would elevate the professional status of the practitioner; but I would beg of those practitioners in whose hands the treatment is so commonly associated with local complications, for their own sake, for the sake of their clients, and especially for the sake of their unfortunate patients, to abandon calcium therapy in milk fever, and confine themselves to pumping up the udder. After all, mammary inflation possesses the virtue of simplicity. It is so simple, in fact, that it can be, and is, practised daily with success by many knowledgeable cow-men.

Major H. Kirk (London) said he was sure they all owed a debt of gratitude to Mr. Spicer for consenting to write for them that paper on "Recent Advances in Therapeutics." Quite frankly, however, he was disappointed with the paper, not only because of its meagre information, but because most of the therapeutic remedies alluded to were proprietary preparations, such as Odylen, Devenil, Monekil, Omnadin, Danistol, etc.

Without wishing to detract from the undoubted virtues of many of those products, the speaker thought that more should have been told them of the new basic drugs, or at least the new uses to which well-known old drugs had recently been put.

Mr. Spicer dismissed in a few words all the advances made in treatment by light rays of various wave lengths; he expressed no opinion of his own, but said that by some people ultra violet rays were condemned as useless, whilst by others those rays were used for all bodily ills. It seemed hardly necessary to point out how entirely in error both schools of opinion must be. No therapy was a cure for all ills, and when people expected to attain but failed to realise such 100 per cent. successes. discredit was at once showered upon the method.

Ultra violet rays, for selected diseases, were invaluable. Red or heat rays, infra red rays, or normal sunlight, were all valuable for their indicated purposes; but whilst Mr. Spicer threw doubt upon the ability for deep penetration of the infra red rays, he probably forgot that penetration was only a matter of wave length. The rays of very short wave length, such as X-rays, could penetrate even steel.

Voluminous evidence had accumulated concerning the value of ultra violet rays and of irradiated ergosterol in the prevention and cure of rickets. He thought everybody accepted that.

Those rays had proved of no less value in obstinate cases of eczema, at any rate in the speaker's own experience; and he regarded the installation of light-producing apparatus as a normal and necessary furnishing of every surgery.

It was comparatively only quite recently that actino-therapy had been intensively studied and perfected, and there could not now be any question of the value of ultra violet and normal sun rays in general therapeutics. Perhaps some gentlemen there would not admit it, but they knew that if they got sickly animals and put them in the sun, they would thrive better than if they were kept out of it, and therefore there must be some value in the rays.

The essayist expressed his discontent with endocrine therapy. He had no good word to say for the extracts of adrenal, pituitary or thyroid glands; yet all of them knew how extremely useful all those agents were. Extracts of other glands also were useful, but they must be administered *via* channels which would permit of their absorption by the body, undamaged by digestive juices. They must be in sufficient dosage, and above all, must be given only in suitable cases.

Little or nothing was known of endocrinology 20 years ago, and the internal secretion known as Insulin was not isolated until nine years ago. At that time adrenalin was the only autocoid that had been isolated in a pure state. Thyroxine did not see the light until 1915, and its synthesis was not accomplished until 1926.

Among other developments of the last ten or twelve years might be mentioned the discovery of the calcium controlling function of the parathyroids and the isolation of their hormone in an active state, the separation from the posterior pituitary of its oxytocic and pressor principles, the identification of the autocoids of the ovary and corpus luteum, the relation of the anterior pituitary to the sex glands, and the still more recent work on the adrenal cortex.

Mr. Spicer told them nothing about the remarkable effects of a concentrated aqueous extract of liver in the treatment of severe anæmia. In medical practice this agent was regarded as almost a specific for pernicious anæmia. Similarly, two workers, Blottner and Murphy, of Boston, came to the conclusion in 1930 that this liver extract, prepared by a special process, contained a substance capable of reducing the blood sugar when administered

by the mouth, its action being comparable to that of insulin.

In 1922, the average life of a diabetic human patient was six years. To-day, a growing percentage now outlived their life expectancy, thanks to insulin. Insulin, however, might be too expensive and laborious a treatment for animals, but they had liver extract as a mild substitute.

Mr. Spicer devoted a deal of space to calcium as a therapeutic agent, but he did not mention the conclusion arrived at by many investigators in the laboratory and in the field, that calcium alone given by the mouth was disappointing because it was largely excreted, and was not absorbed. More recently, it had been discovered that some other force had to be present in order to cause absorption and retention in the tissues. Such adjuncts were vitamin-containing foods, such as cod-liver oil, or carotene given by the mouth, parathyroid extract injected subcutaneously, and ultra violet irradiation.

Vitamin therapy, of which the essayist mentioned no word, had made big strides, and the discovery that carrots were rich in vitamin A was of fairly recent date. Highly concentrated preparations of vitamins A and D in combination were now obtainable in capsule form for general use in infective processes. Carotene had recently been applied to the treatment of puerperal sepsis, he believed, with considerable success.

It was surely only of very recent date that glycerine had come to be regarded as an antiseptic. At least, it was extensively used now by medical men as a pure injection for the uterine and vaginal cavities.

The active principle of lobelia (lobeline) had only recently come to the speaker's notice as a respiratory stimulant and preventive of shock in cases of chloroform overdosage. And so one could go on almost indefinitely reciting real advances, without mention of a proprietary preparation.

Dr. R. F. Montgomerie (Bangor), who next spoke, in referring to proprietary preparations, said it seemed to him very forcibly that the time had arrived when the National Association might spend some of its funds in analysing and publishing to the profession the composition of some of those very wonderful products—(applause)—and even further, might he suggest that they extend their scope of enquiry to those products which had no such wonderful names, but were just as worthy of interest. If he might throw that out as a suggestion, he would do so now, and he hoped someone would follow it up.

Professor Greig had used the name "Transit Tetany in Mares" for a disease now well recognised, and had applied that term in an article published in America and reprinted in this country. If he might cross swords with his old teacher, he would enquire why this name should be applied to a condition, tetany, seen quite occasionally in mares which had *not* travelled and in *male* ponies which had just completed a journey. (Laughter.) Surely it would be better to speak of "Tetany in Equines."

He intended to confine his remarks to that part of Mr. Spicer's paper which dealt with the treatment of liver rot, and would emphasise that, since Mr. Spicer appeared to concentrate on the treatment of the disease, his main remarks would not concern dosage as a means of control.

He hoped Mr. Spicer would feel in no way offended if he took his own line of stimulating discussion on this paper by expressing the opinion that the review of the treatment of liver rot he had given them was distinctly misleading.

For example, Mr. Spicer had said that a certain piece of work showed that carbon tetrachloride "did not touch the parasites until they had been in the sheep for four weeks." That statement certainly could, and easily might, mislead. A much more true and informative statement of the result of that work would have been something like this: "That the drug given in a 1 c.c. dose did not touch any of the parasites until they had been in the sheep at least nine weeks; whereas a 10 c.c. dose killed some of the parasites only four weeks in the sheep, together with all—or almost all—those flukes which had been there for a longer period."

There was a very material difference between the latter statement and the one which appeared in the paper.

Mr. Spicer, again, left the impression—with the speaker, anyhow—that to him all outbreaks of liver fluke were the same, and that following an off-hand diagnosis, one might proceed to apply the treatment which was found effective in the outbreak previously dealt with.

That seemed a simple path, but like so many such paths, it would lead them into a wilderness sooner or later, and he thought it was that off-hand method of diagnosis and treatment which left them in the wilderness in which that paper certainly left the speaker.

Fluke infestation might cause disease conditions as widely different as night from day, depending chiefly on the age and number of the infesting flukes, so that a really accurate diagnosis was *the* prelude to treatment. He illustrated this by recalling the so-called "acute" type of liver rot in which sheep showed none of the classical symptoms and died with a myriad of tiny flukes, perhaps only two or three weeks in the sheep and just arrived at the liver, having caused extensive hæmorrhage into the abdominal cavity. He asked them to contrast that with the classical rot in which

relatively few flukes, all mature, were living in the bile ducts of a greatly cirrhosed liver. Of course, there were stages between those two conditions, but surely no-one would suggest that the treatment of those two disease conditions would be the same.

He would carry them to another most important point. So far as he was aware, no-one had upset the contention, based not only on experimental but also on field evidence, that as the liver fluke matured, so did it become more easily assailable by the drug—be it male fern or carbon tetrachloride. That was, he thought, a most important point.

Surely, then, if what he had said was true—and he believed it was—it would not be contended by anyone that the same prognosis could be given in every outbreak of liver rot or the same line of treatment made routine practice with unfailing success. Dosage with 1 c.c. of carbon tetrachloride could only be expected to give pleasing results when at least the majority of the flukes had been more than nine weeks in the affected sheep. When the greater proportion of a moderately heavy infestation was of more recent origin, a larger dose was indicated.

This line of thought must also make it plain that there was no good ground for comparing the results obtained in the use of one drug in one flock with those of another drug in another flock, unless it was known that these two flocks were infested to a similar extent with flukes of similar age. Otherwise the comparison was of no value.

Furthermore, how could it be contended, and it had been in that paper, that the successful use of one preparation some little time after another had been employed and failed, was evidence that the second treatment was the superior? It could not be contended. In the interval between these two treatments, the infesting flukes were daily—he almost said hourly—coming to a stage at which they would be more easily killed. This could easily happen when the line of treatment first used was 1 c.c. of carbon tetrachloride, because that dose would not kill flukes which were younger than nine weeks, and in the interval between "treatments" the younger flukes would become more easily assailable.

The speaker could prepare sheep for them and give them any result they wanted, either favourable to carbon tetrachloride, *provided they used 1 c.c.*, or against it, and he thought they saw quite plainly how he would prepare the sheep. The age of the infestation was the important point.

Personally, he was not the least surprised to hear that all of those 7,000 sheep successfully treated with Danistol had previously been "treated" with carbon tetrachloride. He could not think it would surprise Mr. Spicer if the reverse tale were told, for the explanation was obvious.

He had had brought to his notice quite a number of instances in which this happened. Such a case had been related to him since he reached Folkestone. Evidently this farmer dosed his sheep with Danistol, purchased through an agent, and after six weeks he appealed to his practitioner because his sheep were "going wrong again." The practitioner in that case made a *diagnosis*, which was the speaker's important point—diagnosis came before treatment. He made *post-mortem* examinations of certain sheep, came to the conclusion that it was liver rot, and, most important, had the approximate age of the liver flukes in these sheep determined. With that knowledge, he treated the sheep and had very good results. In the treatment of liver rot, diagnosis came before treatment, and a diagnosis was not a diagnosis unless it included an estimate of the age of the infesting flukes, more especially if they were proposing to use carbon tetrachloride, for the relationship between the dose employed and the assailable age of the fluke was known for this drug.

Mr. Spicer had gone back to 1917 in referring to male fern. Really, he might have travelled back into last century to refer to it. Mr. Spicer gave them the impression that a particular preparation had been the same since 1917. The speaker did not know if that was true, but what he did know was that its application had changed. They would remember that at one time one was recommended to give two doses on successive mornings; nowadays, a single dose was recommended. That change occurred some time in 1926-27. It was interesting to notice that a well-known pharmacopœia published, a few years ago, an analysis of Danistol which made it appear that this preparation did contain carbon tetrachloride.

He had been talking about flukes, and he hoped they would realise there were flukes and flukes and that there were different lines of treatment. He was perfectly satisfied no man had come into the world yet and discovered a 100 per cent. successful treatment for liver rot. (Applause.)

Mr. Spicer seemed to make some mystery as to whether Danistol killed immature flukes or not. That was a matter easily enough settled; a properly staged experiment would prove the point.

He had no evidence that the Danistol of to-day did kill all immature flukes, but he recalled an experience away back in 1924 when he was asked to investigate an outbreak of liver rot in which sheep were still dying after dosage with that material. By a coincidence he arrived at that farm when a member of the

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research staff of the Ministry and a representative of the company which sells Danistol were looking into the matter. *Post-mortem* examination of sheep showed quite plainly that flukes which had been present at the time of dosage had not been killed by the preparation.

He hoped they did not imagine that he was trying to puff up carbon tetrachloride or to decry Danistol. He knew the qualities of Danistol and believed that he properly appreciated its shortcomings. It was no interest of his to recommend carbon tetrachloride simply for the sake of seeing that drug used.

Professor J. G. Wright (London), said it had been stated that Mr. Spicer had confined his remarks to proprietary preparations, and he had been castigated for so doing, but he (the speaker) appreciated Mr. Spicer's difficulty. The British Pharmacopœia was hopelessly out of date. Fortunately, a new edition was promised for October of this year. There were, however, degrees of proprietariness. There was a vast difference between a quack remedy such as red drink and, let them say, some of the complex organic agents which had been discovered by reputable and experienced chemists, many in Germany, which would only be issued to members of the profession. He did not think one should stigmatise all these agents as proprietary preparations and for that reason leave them alone, for if they did, they would be sadly behind in the rapid advance in therapeutics. He drew attention to the recent work which had been done in the field of anæsthesia and narcosis, a field that was receiving great attention in the medical world.

In veterinary anæsthetics they had not advanced as far as they might. They accepted morphine and chloroform; they must, however, still search into the field of narcosis, with a view to reducing to a minimum the danger which must always be connected with anæsthesia. Luminal was one of the first of the barbitone group to be introduced, and it had been found valuable in cases of cerebral hyperæsthesia and convulsions. Veronal was an allied drug, used in man. Quite recently from America another of this group, called nembutal, had arrived. It had been used in both large and small animals.

The Americans used in small animals a dosage of one-sixth grain per pound of body weight, and his experience was that age, and disease, in addition to body weight, must be taken into consideration when computing the dose. He thought nembutal, in old animals, might go far to replace morphine. They had been using morphine for years, but it was a very complex agent, and had very complex action on the nervous system, which was likely, especially in old animals, to be a hindrance rather than a help.

Another recent advance was the use of mercurials in the treatment of œdema. The results in some cases of cardiac ascites were so striking that he felt that the attention of members should be drawn to this action of the agent. Calomel had for years been used in small quantities for reducing abdominal œdema in man.

Dr. Montgomerie had spoken at some length on the use of carbon tetrachloride, and the speaker would commend to him the necessity for the study of the agent's toxic actions. Dr. Montgomerie called Mr. Spicer to task for not sticking strictly to his (Dr. Montgomerie's) findings regarding dosage, and the speaker quite agreed with him. The speaker would point out, however, that whilst Dr. Montgomerie recommended a dose varying from 5 c.c.-10 c.c. for cattle, if recent literature on this point was reliable there appeared to be no surer way of killing cattle which were in good condition, than the administration of 5 c.cs. of carbon tetrachloride. There was some evidence, as yet not very well founded, that this increased toxicity was related to Ca deficiency. The idiosyncrasy of cattle to small doses was certainly striking and he commended to them the further study of the pharmacology of the drug whereby this danger might be overcome.

Mr. Tudor Hughes (Oswestry) said that while recognising the value of some of the proprietary preparations dealt with by Mr. Spicer, he would confine his remarks to those that were in the British Pharmacopœia, because he thought everybody would have had a large measure of experience with them, but he could not claim quite enough experience of his own to pass an opinion upon some of the proprietary remedies.

They had heard carbon tetrachloride referred to very largely, but they had not heard anybody speaking yet from direct personal experience with it in cattle. The speaker recently had an outbreak of trouble in a group of yearling cattle that had sunk to a deplorably low condition, and a *post-mortem* examination upon one that died confirmed liver fluke infestation. He got in touch with Dr. Montgomerie over the matter, who very quickly had some estimates as to the degree of infestation of the fæces with ova, and told the speaker he had better start off with these yearlings with a dose of 2 c.c.

The speaker tried one or two, but the response did not seem to be rapid enough to save the situation, and Dr. Montgomerie said he must work up the dosage and so they went on to 3 c.c. doses, after giving them a week's rest, and then the 3 c.c. dose was repeated, and suitable doses did save that group of animals from further deaths, and they had what might be termed a satisfactory recovery.

The best way of dosing cattle with carbon

tetrachloride was to take a wide-mouthed bottle of cold water and put a 1 c.c. capsule in, giving them as drenches, and not in bolus form.

With regard to distemper, he thought they would all agree it had now been found more satisfactory to increase the interval from seven to 14 days before administering the virus.

Concerning colloidal manganese, he thought those who had tried it would agree it was not much use for the acute mastitis, and he had a doubt in his mind whether when the mastitis had attained to the chronic stage any medical aid could mitigate the damage done to the parenchyma of the udder.

He had found calcium gluconate was the best agent to use in sows showing eclampsia, and the best way was to give it hypodermically behind the ear. It had also been found a useful adjunct in milk fever in ewes.

He then referred to cows which simulated milk fever weeks after parturition, and wondered whether it was not a relative calcium deficiency brought about by protein excess. If they did not have the recumbent cow well packed up on a good bed and turned, they were likely to find that she would get myositis in the gastrocnemius muscles, and they would have tremendous trouble in getting her sound again.

Glucose itself was an agent that he thought they could use with advantage on a larger scale, administering it by the mouth, especially in cases of acetonæmia.

To get back to some of the old remedies—he had eye trouble in some valuable horses, and in one case the uveal pigment was drawn as a string across in front of the lens. They persevered with atropine until they got the pupil dilated enough to break this string, and then they put the animal on a prolonged treatment of potassium iodide until toxic symptoms appeared, and then they had to slack off. They would be surprised how that eye was clearing up from the condition in which it was seen at first.

The speaker, in concluding, described a farmer's treatment of cases of Johne's disease with sloe gin and ginger.

Mr. W. Jackson Young (Newcastle) said he had read Mr. Spicer's paper with mixed feelings. He was disappointed to see so many proprietary preparations mentioned, because the composition of some of them had never been published.

They knew the chemical composition of Luminal and Avertin, as the makers had told them, but they had not been informed regarding Danistol. He also had seen it mentioned that Danistol contained carbon tetrachloride.

Many years ago, he did not know how many, in Hunting's time, he wrote to the *Veterinary Record* and suggested a Veterinary Pharmacopœia,* but no discussion took place, and he still held that they required it. He did not hold, however, that they required a book on secret remedies. He knew the composition of many of the red drinks and ointments that were on the market, but he was not brave enough to publish a book on the subject. What they did require was an Act of Parliament dealing with livestock remedies prescribing that no remedy should be exposed for sale unless its composition was shown on the label.

He had recently been reading about a preparation that was sold for the cure of livestock. There were thirty-two ingredients in it. It was a real good shot gun mixture and would cure every ailment.

A new British Pharmacopœia was being issued about the end of September. It contained some drastic changes. There were 128 additions and 357 deletions. The additions included preparations from A to Z, such as Acriflavine—a valuable antiseptic—to Zinci stearas—a dry dressing. Chlorbutol, a local anæsthetic, and Fluoresceinum solubile, which was useful in ophthalmic work, had been added. Dextrose was also included and could be added to solutions of local anæsthetics in order to assist in keeping the action localised.

Carbon tetrachloride, under the name Carbonei tetrachloridum, found a place in the new Pharmacopœia. The genitive case appealed to him.

Pharmacopœias interested him as during his days as a pupil he had read the B.P., 1898, and when he finished that he was given the Companion, compiled by Squire, and after that the Extra-Pharmacopœia. (Laughter.)

He was satisfied that if all the drugs were poured into the sea, it would be very bad for the fish, but very good for mankind. (Laughter.) It had been said that " we pour drugs of which we know little into bodies of which we know less."

Carbon tetrachloride was useful as a solvent for iodine and he used it as a preventive for swine erysipelas.

In conclusion, Mr. Young said he thought some resolution should go forward from a meeting such as that to the " National " Council, pressing for an Act of Parliament dealing with livestock remedies.

Mr. M. Crawford (Ceylon) said that in Ceylon they used carbon tetrachloride very largely for hook worm, which was the original use of the drug in man. They used 3 c.c. doses for terrier dogs—that was the standard dose. He employed that dose very largely with success, but ultimately ran up against trouble, for some dogs

* See *V.R.*, Vol. xx., May 9th, 1908, page 799: " Drug Adulteration—A Suggestion." W. Jackson Young.—Ed.]

receiving that dose died within 48 hours after its administration, with tetanic symptoms. The dogs that died were fed on a diet consisting largely of curry and rice. Rice was very deficient in calcium, and it struck him that might be the cause of the trouble. He put such dogs on calcium lactate for one week before dosing with carbon tetrachloride and he had had no trouble since.

As regards cattle, they had trouble with a worm, in the fourth stomach, for which they had no satisfactory drug. They had used carbon tetrachloride fairly extensively in doses up to one ounce, without any fatal results. He did not know why this was. It was interesting, because the soil in Ceylon was deficient in calcium, yet their cattle could stand a dose of one ounce of carbon tetrachloride without any trouble.

Milk fever was a disease he hardly ever saw, and he believed that was the same all over India. The dairy cattle in Ceylon were of Indian, Ceylon and imported European breeds. Naturally, the European cattle were heavier milkers. He had never seen a case of milk fever in a native or half-bred animal, but he had seen it very rarely in a typical condition in animals of European breed. It might be that there was some breed idiosyncrasy in native cattle.

Mr. E. P. Barrett (Margate) said he had found avertin very useful as an anæsthetic for cats. When given by the rectum, there was a serious loss and there was the mess one got thereby. He had, therefore, recently been giving it by the mouth, and he found it more efficient, more rapid in action, and his experience of it, so far, was quite favourable. He found a cat was completely anæsthetised in about five minutes, and it was advisable to start operating at once, because within half-an-hour the cat was returning to something like a narcotic stage. He found that normal saline, injected subcutaneously, was very useful for hysteria.

Mr. Hugh Begg (Hamilton) congratulated Mr. Spicer on his paper. He had done exceedingly well, considering the type of the subject which he had attempted to bring before them that day. (Applause.)

Naturally, as one who had been particularly interested in the subject of tetany for the past 21 years, he was interested in that section of the paper. He used to deal with it, under the cloak of ignorance, as parturient dyspepsia, but that occurred 20 years ago, and he was so cut up at his failure to cure that he did not see the connection between grass staggers and milk fever.

Gluconate treatment was going out in Lanarkshire, and they were going back to the old treatment of injecting the udder. Practitioners told clients they were certain to have an abscess with gluconate; they were so sure of it.

Mr. L. W. Bovett (Bridgwater) said at first he had as much trouble with abscesses after calcium injection in cows as anybody, because he did not put it in subcutaneously. One must also massage the site of the injection.

On one occasion, his brother asked him to administer avertin to a toy "Pom" to remove some teeth. He computed the wrong dose, and gave a double dose to the animal, which ceased breathing for 35 minutes, during which time they applied artificial respiration. They injected calcium subcutaneously and adrenalin, and the animal recovered completely.

Major F. Chambers (Wolverhampton) stated that to a number of cattle he had given half-an-ounce to an ounce of carbon tetrachloride in a quart of milk, and he had not had a death. These cases, which they considered to be fluke in cattle, were a mixed infection of strongyles and fluke.

The Chairman said he thought the local Committee were to be congratulated on having selected that subject, and in having chosen Mr. Spicer to set the ball rolling. (Applause.) As Mr. Hugh Begg had already pointed out, it was utterly impossible for any one man to compile the mass of information that had been given to them that morning. Mr. Spicer was responsible for provoking that observation, and they had a lot to thank him for.

He did not intend to discuss the paper at all *en masse*, but there was one point he would like to mention. It was the reference that had been made to proprietary remedies. He would like to ask them to distinguish—and he thought they should do so—between proprietary remedies and quack remedies. Proprietary remedies were prepared in a particular way by complicated methods, and could be only prepared under those circumstances. They were still proprietary because they were only prepared and manufactured by certain specialised firms. He would like them not to regard them as quack remedies at all.

The Reply

Mr. Spicer, in reply, thanked the Congress for the kind way in which they had received his paper. As Professor Wooldridge had said, it was impossible for him—one man—to know all those things, but he had very successfully provoked discussion, and a great deal of information from the various speakers. He did not think he could have done much better in that respect.

With regard to the calcium theory, he was afraid he had always disagreed with Professor Greig on that point, and he always thought that he had never really explained certain points.

The calcium theory, to the speaker's mind, did not explain those several points, and he mentioned them several years ago in a paper he wrote on Saline Therapy. It did not explain why first calvers, and in large majority, second calvers, did not have milk fever. It also did not explain many other circumstances.

The question of abscess formation seemed to be a very disputed matter. A great many veterinary surgeons got abscesses and many others said they did not. With regard to preventing cows having milk fever by injecting calcium after calving, in the speaker's experience many cows had milk fever several times, but they might have it for two years running and then miss a year or two and then go down again; that fact made it very difficult to arrive at the truth.

In cases of eclampsia in the bitch, treatment by calcium injection was quite unnecessary because treatment with normal saline and bromide was always successful.

Major Hamilton Kirk had criticised him because he had not gone deeply into the question of the different rays and gland therapy, but they were subjects about which he (Mr. Spicer) knew very little and they were much debated subjects: Major Kirk would have done better if he had spent his ten minutes in telling them something about those matters.

As for the different gland treatments, one knew that a tremendous amount of work had been done on this subject, but the results were very uncertain. There were certain things we knew gave definite results in certain cases, like pituitrin, adrenalin, and insulin, but the two former were hardly recent advances and insulin did not give very good results in dogs; again, the use of liver in pernicious anæmia was not of much benefit to the veterinary profession because dogs were not often subject to that disease. Moreover, those glandular product treatments were not of much use in ordinary cattle practice because of the expense.

He thought Dr. Montgomerie had told them practically all they need know about the use of carbon tetrachloride and Danistol. With regard to carbon tetrachloride and cattle, the results seemed to be very uncertain and sometimes dangerous, but there was just the one point which several people referred to, *i.e.*, giving carbon tetrachloride in milk. The question was: Did that render it any safer? and was that the reason why they could give such large quantities without getting animals poisoned? He thought that would make a very interesting study.

One gentleman had referred to sloe gin as a treatment for Johne's disease. He thought they could exclude that, because he had heard of several gentlemen who had tried it for many years, but not successfully. Carbon tetrachloride had, of course, been used for hook worm in humans, and they seemed to give large doses to children without getting any poisonous symptoms at all.

The point made about the cattle in Ceylon not having milk fever unless European bred became extremely interesting, and the statement that the soil there was deficient in lime. Mention had been made of the administration of avertin by the mouth. The speaker suggested avertin by the mouth for dogs, but when he had tried it by the mouth for cats they had nearly always died.

He had not realised that it was derris root that was being used as a wash for warbles in cattle, but if it acted as well as for lice in dogs, it would be a valuable preparation and would save the country an enormous amount of money in damage to the skins of cattle.

Professor Greig, in replying to Mr. Crawford, said Mr. Crawford had given his experience of the toxic effects of relatively small doses of carbon tetrachloride in dogs which had been feeding on calcium-free diets. That experience of Mr. Crawford bore out the work which was done some years ago by Lamson, Minot and Robbins in America, who found that if dogs were given a diet rich in calcium, they could stand relatively enormous doses of carbon tetrachloride, while toxic symptoms resulted if small doses of the drug were given to dogs on a calcium-free diet.

Mr. Crawford's experience of milk fever among cattle in Ceylon, in which there was a very poor calcium content in the soil, bore out their own experiences in Scotland. Recently, the speaker tried to correlate the occurrence of calcium deficiency with certain areas in which milk fever was common, and he failed to do so. He could find no correlation between the degree of calcium deficiency in the soil and the incidence of milk fever. He thought that after all, that was understandable, because milk fever did not arise from a lack of calcium in the diet—because it did not arise from an absolute lack of calcium in the body; as he had said, there was an abundance of calcium in the bones of every cow which fell a victim to milk fever. The disease, he believed, was due to a failure to mobilise calcium from the bones such as was required by the crisis following the initiation of lactation.

In short, Dr. Greig said that milk fever was not due to an absolute calcium deficiency in the body but to the fact that the mechanism which released the calcium from the bones to supply the needs of the blood was for the time being in dysfunction.

No. 2.—THE RELATION OF MEAT AND MEAT PRODUCTS TO BACTERIAL FOOD POISONING IN MAN*

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Bacterial food poisoning in man is characterised by symptoms of disease which appear within a short time of partaking of a particular infected food. Although "food poisoning" *per se* includes contamination of the food with chemical as well as bacterial poisons or toxins, it is proposed to limit this paper to those conditions in which food is infected with bacteria or their products. It may well be pointed out that the word "ptomaine" is inapplicable as that implies decomposition and breakdown of the proteins of the food. It is significant that in most cases of "bacterial food poisoning" the food is normal in appearance, and the symptoms are due not to a breaking-down of the proteins but to infection with a specific organism. The incubation period is short, usually several hours only, and the symptoms consist of headache, nausea, vomiting, diarrhœa and abdominal pain. The patients are better or dead in the course of a few days. The morbidity rate is high, for usually nearly all the people who have partaken of the incriminated food are ill, yet the mortality rate is low and although it varies in different outbreaks, is stated to be about 0·5 to 1·5 per cent. Clinically, bacterial food poisoning may be divided into acute gastro-enteritis—a clinical but not a bacteriological entity—and botulism, which is a toxæmia with a characteristic nervous syndrome. It will be most convenient to consider these conditions under the headings of the causative bacterial organism.

(1) Infection of food with members of the Salmonella group of bacteria.
(2) Botulism.
(3) Infection of food with staphylococci.
(4) Due to the toxic action of other bacteria.

1.—OUTBREAKS DUE TO SALMONELLA BACTERIA

Savage and White (1925) consider that Salmonella bacteria are responsible for 70 per cent. of cases of food poisoning. It is therefore expedient to outline their salient characteristics. They are Gram-negative, non-sporing bacteria, coliform in morphology, and capable of rapid growth on the usual laboratory media. Salmonella bacteria are sharply separated from the coli-ærogenes group by their inability to ferment lactose, and although their carbohydrate reactions are of great assistance in classification the important criterion is their antigenic structure. This is complicated owing to the double antigenic structure of most Salmonella bacteria and the possibilities of bacterial variation. It is known that motile organisms possess two types of antigen, a heat-labile, "H" antigen associated with the flagella and a heat-stable, "O" somatic antigen associated with the body of the bacillus. It has also been established by the work of Andrewes (1922), White (1926) and others that in a mass culture of some members of this group, bacteria may exhibit two phases; the group or non-specific phase which is agglutinated by sera prepared against various allied organisms; the other, a type or specific phase which is agglutinated only by its homologous serum. This is frequently spoken of as the diphasic phenomenon of Andrewes and affects the flagella only. By laboratory technique it is possible to study these antigens separately and the following suspensions for agglutination may be prepared.

(1) "H" suspensions consisting of both bodies and flagella but so treated that any action on the bodies is masked, and the agglutination observed is of the flagellar or coarse flocculating type. These may be either:—
  (*a*) group or non-specific suspensions agglutinated by heterologous sera;
  (*b*) type or specific suspensions agglutinated by homologous serum.

(2) "O" suspensions consisting of the bodies of the bacteria, the flagella having been destroyed by heat or alcohol or prevented from developing by growing on agar to which small quantities of phenol have been added. Such suspensions react with the corresponding serum in a fine granular manner.

For convenience of description, numbers or letters have been assigned the antigenic components identified, and those relevant to this paper are included in Table I. A fuller description of the antigenic and serological relationships is given elsewhere (Lovell, 1932B).

It will be realised that much successful work has been done in the identification and classification of these organisms, and we know something of their habitat. It is, however, often impossible to determine how a particular sample of food has become contaminated. It has been pointed out by Savage and White (1925) that the class of vehicle frequently incriminated is "made-up" foods such as brawn, potted meat, meat pies and sausages. These are foods made from pieces of meat and the chances of tracing an animal from which they are derived are limited. Furthermore, such foods are subjected to considerable manipulation and are more liable to bacterial

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TABLE I.

Species or Type.	Antigenic Structure. "O"	"H" Type.	"H" Group.	Disease Producing Rôle in Animals.	Disease Producing Rôle in Man.
Paratyphosum A ...	VI.	T.	—	Once isolated from a pig (Broudin, 1927).	Paratyphoid fever.
Paratyphosum B ...	I. II.	Specific	G.A.	Reported as found in animals, but extremely unlikely that they are true *Bact. paratyphosum B*.	Paratyphoid fever—doubtful if it causes food poisoning.
Aertrycke	I. II.	Specific	G.A.B.C.	Enteritis in mice, rats, guinea pigs, associated with swine fever in pigs, calf enteritis, "Keel disease" in ducks. Fowls, occasionally parrots, canaries and pigeons. Rarely in sheep causing enteritis. Baboons in captivity, skunks, etc.	Food poisoning.
Stanley	I. II.	S.	G.A.B.C.	Not known.	Food poisoning. (?) paratyphoid.
Reading	II.	D_1D_2	G.B–.E_1E_2.	Guinea pig epidemic. (Isolated from water supply of Reading during epidemic of paratyphoid).	Acute gastro-enteritis and paratyphoid-like fever.
Derby	II.	R.Q.	—	Pigs with swine fever	Food poisoning.
Abortus equi... ...	II.	$D_1N_1N_2$	—	Abortion in mares	Not known.
Abortus ovis	II.	W.	$G.E_1E_2+$	Abortion in sheep	Not known.
Bact. suipestifer (American).	V.	W.	$G.E_1E_2$	Pigs with swine fever in America—one strain from blood and liver of foxhound. (M.R.C. Sp. Rep. Ser. 64.)	Occasionally food poisoning — septicæmia.
Bact. suipestifer (European).	V.	—	$G.E_1E_2$	Pigs with swine fever in Europe—one strain from monkey in captivity	Food poisoning, mild pyrexia, enteric, septicæmia, abscess formation.
Glässer	V.	W.	$G.E_1E_2$	Sucking-pig enteritis in Germany (Ferkel typhus)	Not known.
Voldagsen	V.	—	$G.E_1E_2$		
Paratyphosum C (Hirschfeld).	V.	W.	$G.E_1$	Not known.	Paratyphoid fever—septicæmia with abscess formation, etc.
Thompson—Berlin ...	V.	Specific	$G.E_1E_2$	Two strains (one presumably of pig origin) from animals and supposed to be suipestifer claimed by Kauffmann (1929) to be of this type.	Gastro-enteritis or food poisoning.
Newport	IV.	D_1D_2	G.A.B.C.	Recovered from the blood-stained fæces of dog.	Food poisoning.
Morbificans bovis ...	IV.	Specific	$G.E_1E_2$	One strain from cow, puerperal metritis.	Food poisoning.
Enteritidis	III.	$R.P_1P_2$	—	Enteritis in rats, mice. "Keel" disease in ducks. Induration of udder and septicæmic conditions of cows—probably enteritis of calves—pigs probably associated with swine fever.	Food poisoning.
Dublin	III.	$R.P_1P_3$	—	Calf dysentery and diarrhœa. Spontaneous epidemic in mice	Food poisoning—continued fever with septicæmia-meningitis.
Moscow	III.	$R.P_1P_2 \div P_4$	—	Not known	Associated with relapsing fever in Russia.
Pullorum	III.	—	—	Bacillary white diarrhœa of chicken, fowl typhoid, infection of pigeons	Not known.
Gallinarum	III.	—	—		
Sanguinarium ...	III.	—	—		
Anatum	[VII.	D_1D_2	$G.E_1E_2$]	"Keel" disease of ducks	Not known.

Heat-stable "O" somatic antigens are expressed in Roman numerals.

Heat-labile flagellar antigens "H" are expressed in the type phase as "specific" or where the factor is shared by some other bacterium, by a capital letter. In the group phase the antigens are expressed as capital letters.

[ ] = where there is some doubt as to the structure.

contamination. They are mostly foods which are heated often insufficiently to sterilise them and then cooled, a procedure which aids bacterial growth, and finally the preparation of such food is frequently carried out as an adjunct to other businesses such as slaughterhouse work. The chief difficulty is therefore concerned with the reservoir of Salmonella bacteria, for if more knowledge is gained on that point then the paths of infection may be more easily found.

There appear to be no data to support the hypothesis that Salmonella bacteria may live for more than a day or so outside the human or animal body. Further, the outbreaks of food poisoning which can be ascribed to infection from a human source are few, although a number of authentic ones are on record. It is therefore necessary to review the possibility of infection from animal sources. The food may become contaminated in one of two ways:—

(1) The meat may be sound at the time of slaughter and be subsequently contaminated either by animals or by human beings acting as carriers of Salmonella bacteria.

(2) The meat may have originated from an animal which is itself suffering from a Salmonella infection.

The first possibility raises the question of rodents, dogs, and other animals gaining access to slaughterhouses and premises used for the preparation of food. It has been established that mice and rats may suffer from infection with, and carry, Salmonella bacteria. Meyer and Matsumura (1927) examined 775 rats from San Francisco and found 28 infected with *Bact. enteritidis* and 30 with *Bact. ærtrycke*. In this country Savage and White (1923) isolated *Bact. enteritidis* from six of 96 rats caught in slaughterhouses, so that contamination of meat from this source is a very real danger. Many of the viruses used for the destruction of rats are stated to be serologically identical with strains of *Bact. enteritidis*. Tiede (1931) has recently pointed out the danger of one of them; the extensive use of it may infect hares and other game, vegetables used for human food, plants for animal food, and he would strongly support any legislation to prevent the use of bacterial preparations for fighting rodents. It is not known how often dogs may convey infection, but *Bact. newport*, a cause of food poisoning in man, has been isolated from the blood-stained fæces of a dog (White, 1926), and the American type of *Bact. suipestifer* has been recovered from the blood and liver of a foxhound by Dalling (M.R.C. Sp. Rep., Series 64). It may be remembered that some people hold the opinion that normal healthy pigs and cattle frequently carry Salmonella bacteria and that contamination of meat with normal animal fæces may be a source of infection. It can be stated emphatically that there is no evidence of this being the case. Examinations of the tissues and intestinal contents of normal healthy domesticated animals have been carried out by many workers in this country and America (Savage, 1906-7; Bainbridge, 1911; Jordan, 1918; Kinloch, Smith and Taylor, 1926; Lovell, 1932A) and negative results recorded. On the other hand, certain continental workers (Bermann, 1927) have claimed to have isolated Salmonella bacteria from such animals. Even so, the percentage of positive findings is low and many of the isolated bacteria have not been sufficiently well examined to give weight to the thesis that normal healthy pigs and cattle carry Salmonella bacteria as part of their normal flora.

It must consequently be emphasised that fæcal contamination of meat is not of itself sufficient to cause food poisoning. The disease is due in most cases to the presence of a specific bacterium.

Before dealing with the second possibility—the food having originated from an animal suffering from Salmonella infection—it may be beneficial to study certain statistics dealing with outbreaks and arranged according to the type of food incriminated.

Although the nomenclature used by Meyer is somewhat unreliable, it is suggested that 70 to 80 per cent. of the outbreaks recorded in Table II were due to Salmonella bacteria, and of the cases associated with the emergency slaughtered animals this percentage would be even higher. The important points in the tables are the large number due to ox meat and veal, and the comparatively small number associated with the emergency slaughter of pigs. A few food poisoning outbreaks occurring in this country in which the exact type of infective bacillus, and the vehicle of infection, were determined are summarised by Savage and White (1925) and given in Table IV.

In this table the bacteriological findings and corresponding terminology are reliable. It is unfortunate that many continental authors still use an antiquated nomenclature and fail to distinguish between closely allied Salmonella bacteria. Many of their bacteria are recorded as *Bac. paratyphus B.* which seems to include many varying types and is not restricted to the human pathogen causing paratyphoid fever. It is only by adequate and careful examination of the various food poisoning bacteria that one is able to classify them. This is important if we are to be able to assert that certain bacteria may be found in certain animals, and that certain bacteria can cause definite symptoms and be incriminated in the causation of disease in man. By this method we can be of assistance in helping to trace the paths of infection. In Table IV the number of cases associated with bovines compared with sheep and pigs is in

TABLE II.

Number of outbreaks of food poisoning in Germany, 1926-1928, showing type of food incriminated (Meyer, R., 1929).

	Horse Flesh.	Ox Flesh.	Veal.	Pork.	Mutton.	Goat's Meat.	Sausage.	Other Meats.	Total.
1926 ...	7	31	6	11	1	—	20	8	84
1927 ...	3	46	4	17	1	—	23	16	110
1928 ...	5	21	3	16	—	1	17	15	78
Totals ...	15	98	13	44	2	1	60	39	272

TABLE III.

Number of the outbreaks in Table II. associated with emergency slaughtered animals.

	Horse Flesh.	Ox Flesh.	Veal.	Pork.	Mutton.	Goat's Meat.	Sausage.	Other Meats.	Total.
1926 ...	3	11	2	1	—	—	2	·	19
1927 ...	—	13	3	2	1	—	1	·	20
1928 ...	1	11	3	—	—	1	2	·	18
Totals ...	4	35	8	3	1	1	5	·	57

TABLE IV.

Food Vehicle.

Type of Salmonella.	Pig.	Bovine.	Sheep.	Not Meat.	Other Vehicle.	Total.
Bact. ærtrycke	1	7	1	8	5	22
,, *enteritidis*	—	3	—	—	—	3
,, *suipestifer*	—	—	—	1	—	1
,, *newport*	—	1	—	1	1	3
,, *derby*	2	—	—	—	—	2
Total	3	11	1	10	6	31

agreement with the German figures. It is proposed to review and note the types of Salmonella which have been isolated from the various food animals from time to time.

Bovines.

One of the first of the known food poisoning bacteria, *Bact. enteritidis,* was isolated by Gærtner in 1888 during an outbreak of food poisoning. The bacillus was isolated from a fatal case and from the organs of a cow, slaughtered because of enteritis, the consumption of whose meat caused the outbreak. Since then many Salmonella bacteria, chiefly *Bact. enteritidis* and *Bact. ærtrycke,* have been isolated from diseased adult bovines and calves. Many records of food poisoning (Savage, 1920) deal with outbreaks in which the vehicle of infection is milk, and frequently the source has been shown to be a cow suffering from enteritis or mastitis due to *Bact. enteritidis.* Although this may be objected to as not coming within the scope of "Bacterial Food Poisoning due to Meat or Meat Products" it serves to emphasise the fact that cases of food poisoning may be directly due to an infected food animal. A recent outbreak of "milk-borne Gærtner Enteritis" occurring in Aberdeen (Kinloch, Smith and Taylor, 1926) may be cited. In July of 1925, 497 cases of enteritis occurred in Aberdeen. *Bact. enteritidis* was isolated from:—

(*a*) the vomited material and fæces of patients suffering from enteritis;

(*b*) the infective milk as obtained from three households infected with the enteritis; and

(*c*) the udder and flesh of a cow from the dairy herd producing the milk, the cow having suffered from induration of the udder and later a septicæmia.

Two other interesting accounts of milk-borne food poisoning occurring in Aberdeen have been recorded by McAllan and Howie (1932). *Bact. enteritidis* appeared to be the cause of illness in 19 people, and also the cause of enteritis in a cow which had been suffering from persistent diarrhœa. The outbreak ceased with the removal of the cow from the dairy herd supplying the incriminated milk. The other case concerned two human beings who were suffering from enteritis due to *Bact. ærtrycke,* One of the patients had been nursing a recently-purchased cow, which was ill with a profuse diarrhœa, from whose fæces *Bact. ærtrycke* was isolated. An outbreak of food poisoning affecting 35 persons, due to a creamed chicken-veal mixture infected with *Bact. enteritidis,* is recorded by Gaiger and Nelson (1931). It is considered that the incompletely cooked veal was the source, but no details as to how it became infected are available.

An organism similar to *Bact. enteritidis* known as the Dublin type and only recently differentiated from it (White, 1929), has been shown to be capable of causing disease in man and bovines. Smith and Scott (1930) examined a number of strains labelled *Bact. enteritidis* and showed some of them to be the Dublin type. Strains of this bacterium have produced food poisoning, meningitis, and continued fever with septicæmia in man. Several strains isolated from calf dysentery in Denmark, and known as the *para colon* bacillus or *B. paracoli* were also examined by Smith and Scott and they proved them to be the Dublin variety. Two strains isolated by Bosworth from two separate outbreaks of disease in calves in this country were sent to me and they are of the same nature. (An account of these is being recorded elsewhere.) Although it is not suggested that all cases of calf diarrhœa are due to this organism, it is definitely shown to be one of the causes, and such calves are a potential source of danger to human beings. It is consequently interesting to draw attention to the recorded illness of an assistant (Meyer, Traum and Roadhouse, 1916) in America, caused by *Bact. enteritidis* (probably "Dublin"), and contracted whilst dealing with an outbreak of calf diarrhœa. Many strains of *Bact. ærtrycke,* a common cause of food poisoning, are of bovine origin. In addition to the one referred to by McAllan and Howie, Jordan (1925) has reported on a strain which Theobald Smith had isolated from an epidemic in heifers (presumably enteritis) involving the small and large intestines. Savage and White (1925) recorded its isolation from a cow and the original strain isolated by de Nobele in 1898 was apparently of bovine origin. *Bact. morbificans bovis* is another organism shown to be common to man and bovines. Cases of food poisoning due to this bacterium were recently recorded by Sladden and Scott (1927). Pressed beef was incriminated as the vehicle but by circumstantial evidence only. The only previous record of this isolation of *Bact. morbificans bovis* was by Basenau in 1893 from the flesh and internal organs of a cow which had been slaughtered while suffering from puerperal metritis. The meat was condemned and destroyed and no cases of food poisoning occurred. Basenau was struck by the similarity of it to *Bact. enteritidis* which had been found in another animal and had caused food poisoning, that he recorded his observations and preserved the culture.

Swine.

It has long been established that Salmonella bacteria may be found in diseased swine. *Bact. suipestifer* was at one time considered to be the cause of swine fever, because it was frequently found in pigs dead from that disease. It has already been emphasised that the balance of evidence is against this organism being a natural inhabitant of normal healthy swine. It is, however, frequently associated with and apparently often the direct cause of disease in swine. A great deal of confusion has existed in British literature till recently because *Bact. suipestifer* was used to include many types causing disease in man and animals. Table I may assist in differentiating the various types, and indicate that certain of them are found in man, certain in animals and certain in both. It must, however, be made clear that a member of this group cannot be found in all cases of swine fever, and that types other than *Bact. suipestifer, e.g., Bact. enteritidis, Bact. ærtrycke* and *Bact. derby*, have been found in pigs dead from swine fever. *Bact. derby* was first isolated from an outbreak of food poisoning in Derby (Peckham, 1923). It was recovered from a portion of pork pie, part of the incriminated batch, and also from a tank on the premises, into which the large intestines of pigs were placed after slaughter. The premises were a pork pie and bacon factory, part being used as a slaughterhouse for the pigs.

Both types of *Bact. suipestifer* may infect man. Scott (1926) has recorded four outbreaks due to the monophasic European type whilst many of the strains examined by White (1926) were from cases of food poisoning. Clayton, Milne and Menton (1930) record an interesting outbreak involving eight patients and three deaths. A pork pie was incriminated but only by circumstantial evidence. The interest in this case is the finding of the diphasic American type of *Bact. suipestifer* as the causal organism. This bacterium is rare as a human pathogen but quite common in diseases of swine, especially in America.

Sheep.

Outbreaks of food poisoning associated with mutton appear to be rare. *Bact. ærtrycke* was frequently known as the "mutton" type and was isolated from a fatal case and from the canned mutton causing the illness at Newcastle in 1910. Sheep themselves sometimes suffer from a Salmonella infection. Bruns and Gasters (1927) record a virulent outbreak of enteritis in a flock of 300 sheep. About 160 died or were slaughtered and a "paratyphus B" bacillus (*Bact. ærtrycke* according to White, 1929) was isolated. Many people were taken ill, of whom some died from eating the flesh of sheep which were slaughtered, although the meat had been examined and passed. The commonest Salmonella disease of sheep in this country and Germany appears to be abortion of pregnant ewes due to *Bact. abortus ovis* (Bosworth and Glover, 1925; Lovell, 1931). There is no evidence of its pathogenicity for man.

Fowls, ducks, geese, pigeons.

The common Salmonella infections of domesticated birds are due to *Bact. pullorum* and *Bact. gallinarum* (*Bact. sanguinarium*). As far as one can judge these organisms are non-pathogenic for man and need therefore not be discussed. Scott (1930) has recently pointed out that there are many cases of food poisoning in which eggs may be the source of infection. He records several cases in which the causal organism was *Bact. ærtrycke* and the incriminated food, ducks' eggs. Generally, the eggs were included in trifle, custard, whipped cream or ice cream and therefore not subjected to extreme heat. He discusses the methods by which the eggs may have become infected. One possibility appears to be direct infection of the oviduct during copulation, especially as such operations are carried out on ponds and in ditches where contamination may occur. On the other hand, specific infection of the ovary and transmission through the egg may occur as in infection with *Bact. pullorum*. Finally it is pointed out that eggs, if kept exposed to specific infection and in a moist condition for a sufficiently long period, may themselves become infected. Diseased ducks may discharge in their dejecta enormous numbers of bacteria. Eggs laid in moist contaminated straw or ditches may become infected in that manner. Although in Scott's series of cases, the specific organism was not isolated from the egg itself it is known that ducks may suffer from infection with *Bact. ærtrycke* or *Bact. enteritidis*. "Keel" disease in ducklings has been reported in America by Rettger and Scoville (1920) and in England by Gaiger and Davies (1930). The cause is reported as "*B. anatum*." It is unfortunate that this name has been used indiscriminately, for some of the strains circulating as "*B. anatum*" are *Bact. ærtrycke*. One strain isolated in this country by Gaiger and Davies and kindly supplied me by Professor Gaiger, behaves as *Bact. enteritidis*. Some of the American strains conform to neither species but have an antigenic structure peculiar to themselves, and it is suggested that this type be known as *Bact. anatum*. Some of Rettger's non-ærtrycke strains are of this variety. I have been able to examine several strains of various bacteria isolated from epidemics among birds and from individual cases. (For these cultures I am indebted to Major T. Dalling, of the Wellcome Research Laboratories, and Mr. Norman Hole, of the Ministry of Agriculture.) Two strains from ducks, one of which appears to have produced an epidemic, have been identified as *Bact. enteritidis* and one as *Bact. ærtrycke*. A strain isolated from the heart blood, liver and lungs of a chicken and another from the heart blood and liver of a hen have also been identified as *Bact. ærtrycke*. Doyle (1927) has recorded an epidemic in chicks caused by *Bact. ærtrycke*, and it seems probable that a batch of ducks were infected with the same agent. The possibilities of infection from living birds either through the egg or by soiling must consequently be borne in mind.

An interesting observation has recently been recorded by Baars (1931). A portion of goose flesh which had been pickled and smoked caused severe gastro-enteritis in a family of three. Bacteria which appear to be *Bact. ærtrycke* were isolated from the remains of the goose breast and Baars is of the opinion that the goose was the source of infection because it had belonged to a flock of geese which a month or so earlier had suffered from a "paratyphoid-like" infection. He quotes Schütt (1931), who found 6·6 per cent. of 120 healthy pigeons to be carriers of *Bact. ærtrycke* and considers that they may infect goose establishments. Beaudette (1926) has previously reported *Bact. ærtrycke* infection in pigeons, canaries and parrots.

It must be emphasised, before leaving the subject of food poisoning due to Salmonella bacteria, that although sound food may be infected during its preparation, and that rodents may convey infection, yet animals used for food can and do sometimes suffer from Salmonella infections. These animals are a source of danger to human beings and it cannot be too strongly emphasised that the emergency slaughtered animal is the chief danger. This lends support to the importance of *ante-mortem* inspection of food animals, in addition to the inspection of meat. Finally it is pointed out that birds, particularly ducks and their eggs, may not be without danger to human beings.

2.—BOTULISM

This is an important type of food poisoning with a high mortality fortunately not common in this country. The outbreak occurring at an hotel at Loch Maree in August, 1922, involved eight persons, all of whom died. The vehicle of infection was a glass jar of "wild duck" paste. Apparently one jar of many thousands prepared became infected in a manner which could not be traced. The symptoms of botulism are due to a bacterial toxin produced by *Cl. botulinum* which being an anaerobe requires anærobic conditions in which to develop its toxin. Consequently the vehicle of infection is frequently some type of food packed under conditions excluding free air passage. In addition to meat foods, the toxin may be produced by *Cl. botulinum* in tinned fruits and vegetables. Various investigations make it clear that *Cl. botulinum* is a normal inhabitant of the surface layers of the soil and that it may therefore easily gain access to vegetables, fruit and even meat. Botulism is, however, a rare occurrence in this country and beyond pointing out

that it is due to ingestion of a specific preformed toxin which requires anærobic conditions in which to develop, it is not proposed to discuss it further.

3.—OUTBREAKS DUE TO INFECTION WITH STAPHYLOCOCCI

Quite recently there have appeared in American literature accounts of food poisoning in which staphylococci are considered to be the cause. Jordan (1931) describes several cases in which the vehicles of infection were layer cake, chicken gravy, Christmas cake and cheese. From these various foodstuffs staphylococci have been isolated, both the albus and aureus varieties. Jordan has records of approximately 100 human volunteers who have swallowed varying quantities of sterile broth filtrates of these staphylococcal cultures. Symptoms of vomiting and diarrhœa appear within two to four hours after partaking of from 2 c.c. to 10 c.c. of the filtrate. The symptoms and incubation period of the experimental and naturally occurring illness tend to agree. It is stated by Jordan that staphylococcus food poisoning differs in several respects from Salmonella food poisoning. The incubation period is very short, from two to four hours; symptoms are very severe, accompanied by great prostration, but recovery occurs, there being no recorded death. The sterile broth filtrates of cultures of the causal staphylococcus produce characteristic symptoms when swallowed even in such small doses as 2 c.c. According to Dack *et al* (1928) even 145 c.c. of Salmonella filtrate is innocuous when swallowed by human volunteers. The source of the staphylococcus contamination of food has not been determined, although cows' milk and human throats have been suggested as possibilities.

4.—OUTBREAKS DUE TO THE TOXIC ACTION OF OTHER BACTERIA

Bacteria of a dysentery type have been found as the cause of food poisoning, but such outbreaks appear to be rare, and there is not sufficient knowledge of the part they play to discuss how they gain access to the food. Other bacteria at times considered to be the cause are *Proteus vulgaris, Bact. coli* and *Bact. morgani.* The evidence is often scanty but it is clear that occasionally bacteria otherwise innocuous may, if present in large numbers, cause symptoms of food poisoning. Jansen and de Jong (1930) record an outbreak affecting several hundred persons who had attended a festive dinner in Rotterdam. Illness developed one to two hours after the meal and most of the patients recovered in about 12 hours, after thorough evacuation of the bowels. A potato purée had been left for eight hours on a rack above an oven and contained at the time of examination about 200 million organisms per gramme, of which 50 million were *Bact. coli.* It was assumed because of the negative findings of any specific bacterium or chemical poisoning, that the symptoms were due to the enormous numbers of *Bact. coli* which had been in an ideal medium incubating for eight hours.

Summary

Bacterial food poisoning in man may be due to Salmonella bacteria, the preformed toxin of *Cl. botulinum*, staphylococci or, occasionally, comparatively harmless bacteria if present in the food in sufficiently large numbers. As the majority of cases of food poisoning occurring in this country are considered to be due to Salmonella bacteria, the methods of infection of the food with these bacteria are discussed. It is concluded that a large number of cases are due to food which is originally sound and becomes contaminated during its preparation, and in these cases the danger of rodents and possibly of dogs is emphasised. Rodents may be particularly dangerous if bacterial viruses have been used for fighting them. There are, however, a number of instances where infection can be traced to the food animal—and it is shown by tables that the emergency slaughtered animal is the prime danger. Many members of the Salmonella group have been isolated from diseased animals and this finding supports the *ante-mortem* inspection of food animals. It has recently been shown that eggs, particularly ducks' eggs, may on occasion be not without danger to human beings.

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Discussion

Discussion of this paper, which was the first to be presented to the Public Health Section, took place under the chairmanship of the President of the Section (Mr. Arthur Gofton, of Edinburgh), at the first session of the morning of Tuesday, August 9th, when there was a satisfactory attendance.

Mr. Lovell was briefly introduced by the Chairman, who announced that the former desired to amplify his paper by a few preliminary remarks.

In so doing Mr. R. Lovell said:—I would first like to say how I appreciate the kindness of the Committee in asking me to prepare this paper on the relation of meat and meat products to bacterial food poisoning. I hope I have given what is wanted. Food poisoning is a big subject and I have tried to cram in as much as possible in a comparatively short space—I realise how incomplete it is, and further realise how incomplete our knowledge is of this subject. I do think, however, that it is important that we as veterinary surgeons should be well acquainted with existing knowledge on the subject in order that we as a profession may play our part even more efficiently in the prevention of disease amongst the human population.

Before the paper is open for discussion, I would like to draw attention to one or two publications which have appeared since the preparation of this paper and which rather help to clear up the story as it concerns "infection due to the consumption of eggs." Clarenburg, A., and Dornickx, (1932)—"Food Poisoning due to Pigeons' Eggs" (*Zeit. f. Hyg.,* 114, 31-41), record that 20 persons developed acute gastro-enteritis after consuming a pudding made with pigeons' eggs. *Bact. ærtrycke* was found in the pudding, also in the fæces, blood and urine of patients. Agglutinins for the bacterium were found in the serum of patients. *Bact. ærtrycke* was found in the blood, liver, spleen and intestinal contents of certain of the pigeons; and of 200 eggs examined, *Bact. ærtrycke* was found in six. Agglutins were found in birds which were ill up to a titre of 1 in 6,400. Controls were negative at 1: 50.

In the July number of the *Journal of Pathology and Bacteriology* (1932, xxv., 655), you will find two small extracts, one by W. M. Scott and the other by Dalling and Warrack. By the first-named, dealing with the consequences of Salmonella infections of eggs, three recent outbreaks of acute gastro-enteritis due to *ærtrycke*-infected eggs were described. In each the infection was imputed to the consumption of a duck's egg (two fried, one raw); and in each this suspicion was confirmed by the discovery of *ærtrycke*-infected eggs from the corresponding flocks of ducks. The importance of suspecting an egg as the vehicle of infection in solitary cases of food poisoning was emphasised, as such cases may be otherwise inexplicable.

T. Dalling and G. K. Warrack, dealing with ducks and salmonella infection, state: "So far as we know, bacilli of the salmonella group have not been previously obtained from the interior of duck eggs. Some eighteen months ago we heard that a large number of ducklings had died on a farm. We obtained 12 ducks—six positive by agglutination and six negative—and kept them at the laboratories. Repeated tests were made during twelve months. The negative reactors remained negative and the positive remained positive. One hundred and sixty-six eggs were laid by five of the positive reactors; from seven of these eggs laid in clean bedding, *B. gærtner* was obtained. The five ducks were then killed and *B. gærtner* was found in the ovary in each instance but in no other organ.

Mr. Lovell concluded by saying that he hoped that a little later on Major Dalling might be there, as he could tell them a little more about that aspect of the subject. It completed the work of Scott with regard to the circumstantial evidence in which he implicated ducks' eggs as a vehicle of infection.

In opening the discussion Professor J. F. Craig (Dublin) said:—

It has been claimed that "the most important problems with which meat inspection is concerned at the present time are those dealing with the prevention of meat poisoning," and I think no one who has given it any consideration will

disagree with that pronouncement. It is therefore an exceedingly appropriate subject for discussion in the Public Health Section of this Congress.

The subject is not a new one, for as far back as 1876 Bollinger maintained that "the pyæmiæ and septicaemiæ are more important from the standpoint of human health than anthrax and glanders, since the former are much more frequent than the latter and since the toxins of pyæmia and septicæmia are not destroyed by cooking." This statement remains as true to-day as when it was first made.

In the days before the introduction of intensive bacteriological methods of study the outbreaks of poisoning of this nature were ascribed to "ptomaines"—products of decomposition of the nature of amines such as sepsin, and the condition is still commonly or popularly and wrongly referred to as "ptomaine poisoning," although as a matter of fact the food or flesh shows no appreciable change and certainly no evidence of putrefaction. Moreover, it is now 44 years since Professor Gærtner of Jena first discovered one of the specific bacteria in an outbreak of meat poisoning, *viz.*, the organism now known as the *Bacterium enteritis gærtner*, and since then the *Bacterium ærtrycke* and many other types of specific organisms concerned in food poisoning have been isolated, differentiated and classified.

Some indication, however incomplete and imperfect, may be got from reference to the reports of outbreaks in recent years regarding the prevalence of food poisoning. In the United States from 1910 to 1925, 7,112 persons were involved in 1,174 outbreaks, of which at least the great majority was of the type we are now considering. Records of 112 British outbreaks between 1878 and 1918 affecting 6,190 persons with 94 deaths were collected by Savage and a further record of 100 outbreaks between 1921 and 1923 was brought together by Savage and White. Meyer has given statistics of food poisoning in Germany from 1923 to 1928 in which the outbreaks numbered 493 and affected 14,567 persons.

In this connection one may point out that the numbers of annual outbreaks of meat poisoning in Germany do not appear to have appreciably decreased in the statistical period even although a general scheme of meat inspection is in operation. These figures, although admittedly incomplete, emphasise the great importance of this whole problem.

Mr. Lovell in his very interesting and instructive paper has brought together an immense amount of information on this important subject within a very small compass and I can heartily congratulate him on his very clear and comprehensive exposition. He has given a great deal of consideration to the methods of classification of the bacteria concerned and I realise that there is great need for the adoption of accurate methods in their identification and differentiation, particularly as a means of ascertaining the origin of infection. I intend, however, in the few minutes at my disposal to confine myself to questions of a more general nature regarding the source of outbreaks of bacterial food poisoning and the preventive measures which may be suggested.

Mr. Lovell has classified the forms of food poisoning according to their causal factors, *viz.*, Salmonellæ, *Bacillus botulinus*, Staphylococci and other bacteria which give rise to toxic effects, and he has accorded to each its proper amount of attention in his paper. All but the first of these causal factors are of minor importance to the meat inspector. It may be taken that in botulism, a very dangerous infection, the organism responsible is a common saprophyte. It only enters and contaminates food, whether vegetable or animal, through want of cleanliness in its preparation and only produces its serious effects by the production of an exotoxin when the contaminated food is kept under anærobic conditions. Botulism or parabotulism is found affecting the lower animals, but no case of human botulism has been traced to food prepared from affected carcasses. Similar statements might also be made with regard to Staphylococci or Streptococci which have been connected with outbreaks of food poisoning.

It is now recognised that over 70 per cent. of outbreaks of bacterial food poisoning are in all probability due to infection with organisims of the Salmonella group and it has been shown that in this and other countries the common vehicle is some meat food such as beef, veal, pork or horseflesh. Only occasionally are other foods such as milk, cream, cheese, fruit, rice or potatoes incriminated. In 100 reported British outbreaks, fresh meat was incriminated in only six cases, while tinned foods and made-up meat foods like pork and other meat pies were responsible for more than half the number of outbreaks. It is also a peculiar fact that mutton is seldom a vehicle and is admittedly the safest of the meat foods—that in spite of the name given to one special food poisoning Salmonella, said to be of the Mutton type because it was first discovered in connection with canned mutton.

When one attempts to ascertain how the food came to be infected, one finds that it is in the earlier records that the meat has been traced to its source while in the later records there is often no evidence as to the condition of the carcasses from which the meat was derived, and on that account our knowledge is very incomplete. Some times it would appear that only one portion of a carcass conveyed infection.

The possible sources of infection are:—

No. 1. The animal from which the flesh was derived;

No. 2. Contamination of the food during dressing of the carcasses, during transport, storage or preparation from:—

(*a*) alimentary contents;
(*b*) dirty utensils, knives and hands, or wrapping material or soiling in dirty premises;
(*c*) by human carriers;
(*d*) by the droppings of rats or mice;
(*e*) by flies.

As regards No. 1, it is only in a relatively small number of outbreaks that the flesh food has been shown to come from an animal slaughtered for emergency reasons.

According to the German statistics given for the years 1926-28, about 21 per cent. of all outbreaks of bacterial food poisoning have been traced to emergency slaughtered animals. It must not, however, be taken that every animal slaughtered for emergency reasons is a potential source of danger, but special attention must be paid to the examination of animals which are slaughtered when showing symptoms of disease or in a moribund condition. The animal diseases which have been associated with food poisoning comprise various septic and diarrhœic conditions and include parturient metritis, septic mastitis, peritonitis, pleurisy and pericarditis, joint ill or umbilical infections in calves, febrile gastro-enteritis both in young and adult cattle, and pyæmia—conditions in which there is evidence in the organs and viscera of some degree of toxæmia. Swine fever requires special mention on account of its association with one or other of the types of *Bacillus suipestifer*, a Salmonella which has been found in certain outbreaks of food poisoning; and keel disease, or a similar affection in ducks must be kept in mind in view of the recent outbreaks attributed to the use of duck eggs.

Attention has been drawn by Grüttner to a significant feature regarding the distribution of Gærtner bacilli in the carcass of an animal dead of the infection. He found that the bacteria are at first readily isolated only from the liver and spleen, but afterwards from about the fourth day onwards after death they can be got also from other organs and by enrichment methods from the muscles. This indicates that the propagation of these bacteria goes on rapidly for some time subsequent to death or slaughter of the host and it suggests that the infected flesh is liable to become more toxic and dangerous the longer it is kept.

It has also been noted that these bacteria will rapidly invade the flesh of healthy animals after death under ordinary conditions of temperature and moisture. The invasion may even reach a depth of four or five inches in 24 hours at 15° C.

With regard to No. 2, it is becoming more and more evident that in a very large proportion of outbreaks of food poisoning, the meat is infected *post-mortem*. According to the German statistics, 79 per cent. of the cases were not traced to diseased animals. In these cases the contamination apparently takes place subsequent to slaughter. Where that infection comes from is the difficult matter to determine, and it is for that reason that investigation is required to ascertain the common situations of the food-poisoning Salmonellæ in nature.

It is taken as a rule that the alimentary ingesta of healthy animals are commonly free from the presence of these organisms and that the earlier records regarding their frequency erred by confusing the true Salmonellæ with the so-called para-Gærtner bacilli. However that may be, even their exceptional presence should lead to the maintenance of safeguards against the soiling of the carcass with the contents of the alimentary canal. There is one statement in Mr. Lovell's paper in this connection which calls for some criticism. Mr. Lovell states that "there appears to be no data to support the hypothesis that Salmonellæ bacteria may live for more than a day or so outside the human or animal body." I am sure that in making that assertion he has overlooked some feature of the bacilli and the outbreaks of food poisoning. The first of these is that these bacteria will live for many months in culture media in the laboratory at ordinary room temperature without subcultivation. Another is that Gærtner bacilli have been found to survive in 10-13 per cent. common salt solution or brine for 75 or 80 days. Moreover, outbreaks of food poisoning occur without any definite relationship one with the other, and human carriers have rarely been identified as a source of infection. It might even be said that the very difficulty of tracing the origin of the disease in animals or in man postulates a saprophytic existence for at least some strains of these Salmonellæ bacteria. We know, of course, that rats and mice are sometimes the subject of infection with the *Bacterium enteritidis gærtner* and the *Bacterium ærtrycke*, and some of these animals may remain carriers and infect food with their droppings. But it is not suggested that they are the common source of infection. Therefore soiling of the food must remain suspect at any period between slaughter and consumption.

Flies have also been thought in some cases to have introduced the infection into the meat and it is in the warmer periods of the year that food poisoning is more common. Gross infection or contamination is also more liable when the meat is minced or cut up into small pieces.

It has finally to be remarked that in Salmonella infection cooking does not render the food harmless because the temperature to which the interior of the mass is raised is often not sufficient to destroy all the bacteria, and in any case the toxic products will survive exposure to a temperature of 100° C. and set up alimentary and systemic disturbance shortly after the food is consumed. It is therefore highly important that the public should be safeguarded against the danger of this food infection in view of the fact

that the food shows no apparent change and that cooking food is no protection.

For the prevention of bacterial food poisoning it follows from what has been stated that:—

1. A very careful inspection, both *ante-mortem* and *post-mortem*, should be carried out on all animals which are showing symptoms of disease or appear to be moribund prior to slaughter, and all carcasses which show changes similar to those which have been associated with food poisoning should be excluded from the market and condemned.
2. The greatest care should be taken to ensure scrupulous cleanliness of premises, persons and materials in the handling and preparation of meat and meat products, and also during transport, storage and exposure for sale.
3. All such food should be carefully protected against contamination by rats or mice or by flies.

At the present time routine bacteriological methods are too laborious and prolonged for diagnostic purpose in meat inspection. It is, of course, possible that they might be introduced in special cases, but what would be of service would be some test, such as an agglutination test, which could readily be applied and would point to present and not past infection. This is a matter for further research.

In conclusion, I desire to acknowledge the great compliment which I was paid when I was invited to open the discussion on this important subject.

Mr. W. P. Blount (Goring) said that he should like to ask Mr. Lovell whether he had had any personal experience of the so-called rat virus preparations. At the moment a specific preparation called ratin, embodying the *B. enteritidis gærtner*, was being distributed amongst poultry farmers for the extermination of rats, but he was not certain whether that organism was pathogenic amongst other animals and he would like to know whether Mr. Lovell had any experience on that matter. If ratin—as also with Liverpool virus and other proprietary preparations of the type—were being taken by poultry or animals, they might react to the blood test for bacillary white diarrhœa and yet they might not be suffering from that disease.

He would also like to ask the essayist whether he had any reasonably simple and efficacious method of differentiating the so-called keel bacillus from the ordinary enteric or non-enteric types of organisms met with in chicks and pheasants.

Mr. W. Tweed (Sheffield) observed that he feared that he felt exactly as one did when an outbreak of food poisoning occurred—too much in a fog as to where and how the infection arose. However, he should like to congratulate Mr. Lovell on his paper, which was an excellent summary of organisms incriminated in food poisoning outbreaks. He thought that the essayist might have devoted more attention to ptomaine poisoning than he had done, because he was convinced, from his own experience, that the majority of cases of food poisoning one met in general work could be traced to the ingestion of decomposing food, a process which was associated with many organisms, and it was his experience that these were the chief source, in the public health sphere, of the small outbreaks that occurred from time to time. He felt, in fact, that ptomaine poisoning played a greater part than Mr. Lovell had given it in his paper.

Had the essayist any experience of food poisoning in animals? A few years ago he went, in consultation, to give an opinion (no enviable task!) as to whether the flesh of animals concerned in serious outbreaks of diarrhœa in cattle on two farms was fit for human consumption. On the second of these farms the farmer had, after a number of losses, slaughtered many affected animals "to save their lives." The only organisms to which they could attribute those outbreaks were streptococci and *Bacillus coli*. He carried on those investigations for some time, and eventually traced those outbreaks to a contaminated water supply from a village as the only possible cause of the outbreaks. He desired to ask Mr. Lovell if he thought that sewage poisoning did occur in cattle: he (Mr. Tweed) had always had an open mind on the subject. In the outbreaks of which he had spoken, no Salmonella organisms could be found.

He should like to mention that in this country we were very fortunate in the fact that our meat and other foods were so well cooked, for in Germany many outbreaks of food poisoning were due to the consumption of a large amount of raw meat.

He desired to thank Mr. Lovell for his contribution to that important subject.

The Chairman (Mr. Arthur Gofton) said that he proposed to say a few words in the hope of encouraging others to contribute to the discussion.

He did not think that there was any subject which was of more moment to the food inspector than that of food poisoning and there was certainly none which was more difficult. It was in so many instances almost impossible to incriminate the particular foodstuff responsible, because in the majority of cases the illness was associated with cooked food and the cooking had destroyed the majority of the organisms, which produced the symptoms through the action of their toxins, which were heat resistant. It was seldom possible by feeding with the suspected foodstuff to reproduce in small experimental animals the symptoms which had been manifested by the human consumers of the food.

They knew the practice which prevailed in many cases when an outbreak of swine fever occurred: the owner proceeded to "slaughter

out," and in view of the almost constant association of certain of the Salmonella group of organisms with swine fever it was obvious that the premises must be alive with those organisms, yet, so far as he was aware, food poisoning had never been associated with the "slaughtering out" of the animals on those premises.

Both Mr. Lovell and Professor Craig had suggested that mutton was the safest of the meats in respect of food poisoning because so few outbreaks had been associated with it. He (Mr. Gofton) thought that might not be correct. It might be that fewer cases of food poisoning had been reported in association with mutton and not that there was less risk associated with it. A few years ago he had an interesting case where mutton was incriminated which came to light only as a result of a casual meeting with one of the victims. The household concerned had consumed part of a fore-quarter of mutton and every member had suffered from acute gastro-enteritic disturbance. They were able (in Edinburgh) to secure part of the meat which was uncooked, and from it they were able to isolate one of the Salmonella organisms. They made every effort to trace the mutton back—it had passed through their local slaughterhouse—and their records contained no evidence of this case. The remainder of the carcass had been sold to numerous customers; but there had been no complaint to the butcher of any illness following its consumption. The evidence seemed to suggest contamination during the delivery of that particular fore-quarter of mutton.

Emergency slaughter cases were always a source of worry to the meat inspector. The numbers of emergency slaughters shown in Mr. Lovell's table which were associated with outbreaks of food poisoning were very small in relation to the total number of animals slaughtered for emergency reasons. Where they had definite *post-mortem* lesions associated with emergency slaughter they had no difficulty in deciding what to do with the carcass. But doubt and difficulty did arise when animals which were slaughtered *in extremis* showed no macroscopic lesions to guide them in forming judgment as to the action to be taken. They would like to have a simple, reliable and rapid method of determining in these cases whether or not organisms of the food-poisoning group were present. He agreed with the essayist that such a test might be evolved by further research, but until it had been evolved the food inspector must act on the principle of protecting the consumer, at the same time avoiding as far as practicable injustice to the owner of the animal.

Dr. W. R. Wooldridge (London) desired to raise one point to which Mr. Lovell had not devoted much attention in his paper and which was of some importance to the public health officer, and that was the viability of the Salmonella in meat or other food material. Mr. Lovell had told them that organisms of this group did not as a rule live for very long outside the animal body, but he had said nothing at all about the period of time that an organism might be retained alive in a food product. In these days of transport of food material from one part of the world to another this point was of considerable importance. We were told that emergency slaughter usually gave rise to the largest number of cases of food poisoning. Was that because the organism itself could not remain alive for long in the food product? This point was of importance again with regard to the egg supply of the country, as so many of our eggs came from countries such as China, Russia and the Middle East, where hygienic conditions were perhaps somewhat suspect, and one might therefore expect a somewhat greater proportion of food poisoning outbreaks from that source than actually occurred. Was this apparent comparative rarity due to the fact that the subsequent disease was not very grave and therefore not generally diagnosed, or was it due to the absence of disease owing to the fact that the conditions of transport and period of time required for the food to reach the consumer was sufficient to kill the organisms, or was it just a question of the removal of the danger by the process of cooking the egg?

On the laboratory side: it was obviously important, from the public health point of view, that a quick means of diagnosis should be arrived at. He would ask Mr. Lovell, then, whether in his opinion it was essential to carry out the exhaustive agglutination tests he had described before being able to decide whether food products were a danger to public health. He knew that it was impossible to decide what particular organism was responsible for the trouble without those tests, but would it not be possible to form provisional decisions of public health importance? Mr. Lovell had told them of the necessity of testing for two types of antigens—the "H" and the "O" antigens. Would it be possible to supply the public health officer with a shorter method of diagnosis by only testing for the more important—which ever that might be—of the two antigens?

Mr. M. Crawford (Ceylon) observed that it was difficult to determine the source of infection in so many of those cases of food poisoning. One case came to his notice of a dog under treatment for piroplasmosis, and giving a normal response to treatment, but which developed unusual symptoms and died. *Post-mortem* was made immediately and bacteriological examination revealed the presence of *B. enteritidis gærtner*, this organism being isolated in pure culture from the spleen. That was perhaps worth mentioning on account of the difficulty of determining the source of infection: it might be that such a dog would contaminate foodstuffs.

The Reply

Mr. R. Lovell, in reply, said that he would first like to thank Professor Craig for treating him so kindly in opening the discussion. Professor Craig had, he thought, touched on the crux of the problem with which they were dealing when he drew attention to that rather bold statement of his (Mr. Lovell's) that there appeared to be no data to support the hypothesis that Salmonella bacteria might live more than a day or so outside the human or animal body. He noticed that both Mr. Gofton and Dr. Wooldridge had also touched upon it. He made such an assertion because he wanted to point out his own point of view, *viz.*, that bacteria of the Salmonella group did not live a saprophytic existence. He noted that some of the German workers—Uhlenhuth and his colleagues—adhered to that theory. He did realise that such organisms might live for a considerable time in an artificial culture medium, but there was a vast difference between a Salmonella bacterium and an anærobic spore bearer, which would remain alive in the soil for years. We had no knowledge of the length of time in which Salmonella would remain alive in some such material as straw. He did not think that it could remain viable for long in dust, as otherwise flies would be a greater menace in regard to Salmonella injection than they appeared to be. He referred to the work of Bruce White, who examined flies for Salmonella bacteria but was unsuccessful. The matter "boiled down" to this, that we wanted to know something about the reservoir of Salmonella bacteria. He did not think that human carriers played such an important part in the causation of outbreaks of food poisoning as they did in outbreaks of typhoid and paratyphoid fever.

With regard to the animal carriers, he thought he had mentioned in his paper that they should be on the look out for rats and mice, which were, as they knew, continually infected and carrying the organisms, and they must also be on the look out for dogs: he thought that infection of dogs was by no means uncommon. He was glad to hear of another case, cited by Mr. Crawford, where *Bact. enteritidis* (Gærtner) had been isolated from a dog in Ceylon. He had heard that some of the dogs in Northern India had been shown to suffer from infection with Salmonella bacteria and they would thus be a fruitful source of infection if they were allowed to wander through slaughterhouses or any other place where food was prepared.

His whole point in his paper was to draw attention to the fact that, whether common or uncommon, it might be that domestic animals could and did suffer from infection with this group of organisms and were therefore a potential source of infection to human beings, and that we could, as veterinary surgeons, do our bit towards the public health service of the country by being aware of that fact.

He was afraid that they did not quite agree on some of the figures he had given concerning outbreaks of food poisoning in Germany in relation to the number of animals slaughtered for emergency reasons. He admitted he had been a little bold in stating: "Although the nomenclature used by Meyer is somewhat unreliable, it is suggested that 70 to 80 per cent. of the outbreaks recorded in Table II were due to Salmonella bacteria, and of the cases associated with the emergency slaughtered animals this percentage would be even higher." He would like to withdraw that higher figure and say that they are at least equal.

Then one or two people had mentioned a heat stable toxin. He was afraid he did not agree with Savage in some of his work on that: he did not think that his experimental evidence was quite sufficient to warrant them to believe in a heat stable toxin which was capable of causing food poisoning in human beings.

Mr. Blount had referred to certain rat virus preparations. Those were said to be serologically identical with *Bact. enteritidis*, and he was quite aware that the "O" antigen of the *Bact. enteritidis* and *Bact. pullorum* were identical. Therefore infection with one would produce agglutinins for the other. It was maintained by one German author cited in his paper that the extensive use of rat viruses may infect game. There was a method of distinguishing those viruses from *Bact. enteritidis* and he would supply Mr. Blount with the relevant references. It had been stated by one or two authors that those rat virus strains fermented rhamnose and arabinose more slowly in the phosphate medium described by Bitter, Weigmann and Habs (*Muench. Med. Woch.*, 1926, vol. 73, 940-1) than typical *Bact. enteritidis* strains.

Mr. Blount had also asked about keel disease, and had made reference to *B. anatum*. He (Mr. Lovell) thought it was rather unfortunate that *B. anatum* had ever come into existence. It had been so named simply because it had been isolated from a duck. The American authors had divided up *B. anatum* into an ærtrycke and a non-ærtrycke type. The former appeared to be identical with *Bact. ærtrycke* and the latter had a different antigenic structure which was included in the relevant table of the paper and enclosed in brackets. This meant that there was still some doubt of its antigenic structure. One other strain circulating in this country and isolated by Gaiger and Davies had behaved in his (Mr. Lovell's) hands as *Bact. enteritidis*. Personally he should like to see the name "anatum" restricted to the organism which had been referred to in the American literature as the non-ærtrycke type.

Mr. Tweed had suggested that quite a number of the outbreaks of food poisoning might be true ptomaine poisoning. He (Mr. Lovell) did not

think so. In his view, the reason why people might become infected through decomposing food was due to the fact that the food had enormous numbers of some organism which, if present in smaller numbers would produce no pathogenic results. It was a matter of dosage, and he strongly suspected that the decomposing food would really be infected with such organisms as *Bact. coli* or *Proteus vulgaris*, which, in enormous doses, would produce symptoms of food poisoning.

Then information was requested concerning the diagnosis of Salmonella infection in animals. He was afraid he could not help there, except to say that, so far as he was aware, one could not with any degree of certainty diagnose Salmonella infection in animals without a bacteriological examination which might take days or even weeks to complete. He felt that even the agglutination test and the taking of samples of blood might lead one into error, because quite healthy subjects often had agglutinins for these organisms in their blood serum.

In regard to sewage poisoning, he must say again that he thought dosage played an enormous part. His own opinion was that healthy sewage would not affect anybody; the question was, "when do you get healthy sewage?" (Laughter.)

He was grateful to Mr. Gofton for reciting his case of food poisoning due to infected mutton. Mutton did seem to be somehow safer, but one of the most interesting cases was the one to which he had drawn attention as recorded by Bruns and Gasters, where there was an outbreak of enteritis in a flock of sheep which were being killed surreptitiously, and in spite of the intervention of the police some of the meat had been eaten and a number of people appeared to have suffered ill effects from its consumption.

Quite a lot had been said about emergency slaughtered animals, but he knew of no rapid test which the food inspector could employ to determine whether an animal was or was not dangerous to human beings. He thought one must be guided by the illness of the animal: he would not mind eating the flesh of an animal which had sustained a broken leg, but if it had been ill, with a rising temperature, he should prefer to be fed from some other animal. (Laughter.)

Dr. Wooldridge had asked one or two questions that he simply could not answer. He really did not know, for instance, how long Salmonella bacteria remained viable in meat and other food products: he had searched the literature, but the only evidence he could find was some work by Savage many years ago. Dr. Wooldridge was also anxious to know how long it could remain alive in eggs and said, if the danger were a real one, one would expect more cases of food poisoning from that source. He (Mr. Lovell) was not so sure that one would expect it. When they remembered that eggs were almost invariably eaten by a single person they realised why eggs were usually looked upon as a very safe form of food: it was simply because no outbreak of disease from their consumption was reported.

In regard to the "H" and "O" types of antigen, he thought he mentioned that the "H" antigen was that associated with the flagella of the organism and the "O" was that associated with the somatic part of the bacillus. It had been shown by Felix, Arkwright, Greenwood and Topley and others that the "O" or somatic part was much the more important from the immunological point of view. The somatic part of the bacillus was probably associated with the production of immunity and the corresponding agglutinin was associated with the bactericidal and complement fixing bodies and was considered to be much more important when viewed from the angle of infection. On the other hand, the flagellar or "H" antigen was extremely useful in identification.

He wished to thank his hearers for the patience they had displayed in listening to him.

The Chairman, on behalf of the delegates, expressed indebtedness to Mr. Lovell for his paper and equally thorough reply, this terminating the session.

LIVESTOCK IN SCOTLAND

The Scottish returns, like those of England, show a decrease in the number of horses and an increase in the number of cattle, sheep and pigs. Horses are fewer than last year by 2,500 or 1·6 per cent., all classes having declined except foals, which remain at practically the same figure as in 1931. Cattle show an increase of 13,000 or 1·1 per cent., the increase being shared by all classes except non-dairy cattle over two years old, which are 3,500 down. There are 10,000 more calves and yearlings and 3,000 more cows in milk than last year, while heifers in calf show an increase of 2,800 or 5 per cent. Sheep have reached the greatest number on record, namely, 7,846,600, which is 15,800 more than last year—an increase of 0·2 per cent. There are 27,500 more lambs and 6,300 more breeding ewes, but 19,300 fewer non-breeding sheep above one year old. There were 1,000 more pigs than in 1931, the total number being 163,200; but the present trend in pig breeding is indicated by a reduction of 700 or 3·4 per cent. in the number of breeding sows. "Taking Great Britain as a whole, the agricultural returns show certain marked tendencies," says the *Scottish Farmer*. "The decline in arable farming continues. More land has been put under grass and there has been a marked reduction in the areas under the principal arable crops, with the exception of wheat and potatoes. The increase in grass farming has been accompanied by increased herds and flocks of cattle and sheep, but the decline in cultivation has been accompanied by a reduction in the number of agricultural horses, and also by a decrease in the number of persons employed on the land. There are 19,500 fewer agricultural labourers in England and Wales and 500 fewer in Scotland this year than last."

Notes and News

The Editor will be glad to receive items of professional interest for inclusion in these columns.

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DIARY OF EVENTS

Sept. 5th.—Meeting of the Editorial Committee, N.V.M.A., at 2, Verulam Buildings, Gray's Inn, W.C.1, at 4.30 p.m.

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Folkestone Congress Number

Members requiring additional copies of this issue are requested to make application at once to the Editorial Representative, N.V.M.A., 2, Verulam Buildings, Gray's Inn, W.C.1, enclosing remittance at the rate of one shilling a copy, post free.

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Congress Photographs

Members are informed that they can obtain copies of the Congress Group Photograph, reproduced in this issue, upon application to Halksworth Wheeler, Photographer, Folkestone. Mounted copies 7s. 6d. each, packing board and postage 1s. 9d.; unmounted copies 5s. 6d. each, packing and postage 3d.

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We are deeply indebted to Major G. W. Dunkin for the smaller illustrations which brighten this Special Congress Number and add so materially to its interest. Copies or enlargements of each photograph can be obtained from the Editorial Representative at 3d. and 1s. 6d. respectively, plus 1½d. postage.

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N.V.M.A. Clinical Prize Scheme for Students

Students who are eligible to participate in the above scheme are reminded that their notes must be in the hands of the General Secretary, N.V.M.A., 2, Verulam Buildings, Gray's Inn, W.C.1, by Monday, October 3rd, 1932.

* * * * *

R.C.V.S. OBITUARY

Peddie, John, 86, Siemert Street, Doornfontein, Johannesburg, Transvaal, South Africa. Graduated Edinburgh, December 19th, 1893; died August 5th, 1932.

* * * * *

The Late Mr. J. W. Marsland, J.P., M.R.C.V.S.

In a tribute to the late Mr. J. W. Marsland, J.P., M.R.C.V.S., of Shorey Bank, Darwen, Lancs, whose death was recorded in our last issue, the *Preston Guardian* of August 20th states that Darwen has thereby lost one of its best-known residents, as Mr. Marsland had played a prominent and interesting part in the life of the town for a long time.

Born at Stalybridge over 82 years ago, he moved to Darwen close upon half a century ago to take charge of the Wellington Fold practice of the late Mr. L. Buckley, Blackburn. On the death of Mr. Buckley, Mr. Marsland succeeded to the business, which had been moved to Shorey Bank. He was the hon. veterinary surgeon to the Borough of Darwen and also to the Darwen and District Agricultural Association, of which he was a pioneer member and active worker.

An athlete in his youth, Mr. Marsland served on the committee of the Darwen Cricket and Football Club, in the Barley Bank days, remained a great walker until he was an octogenarian, and displayed his swimming capabilities during a holiday in his 80th year.

Chairman of the Darwen District Permanent Benefit Building Society, Mr. Marsland devoted much time to political and public work. At the Central Conservative Club he was so popular that the members made separate presentations to him on his 70th and 80th birthdays. At election times Mr. Marsland was in charge of literature and posters of the Conservative campaign, and in the distribution of vehicles to bring up voters. A Liberal until at the age of 31, he disagreed with the Gladstone policy in regard to the Boers.

There was one public duty Mr. Marsland performed in which he risked a large measure of his popularity. That was during the war when on the local military tribunal he sat as a Government representative and made demands upon employers of labour and others for the release of men for the Army.

Having been made an honorary member of the police force for valued services as a "special" at Stalybridge, he served as a sectional commander of the special police at Darwen during and after the war. He had been a borough magistrate since 1904. He leaves a married daughter, who lives at Cheadle.

The funeral took place at Darwen Cemetery and was attended by many public and political representatives and personal friends.

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The Late Mr. Rowland Charles Tayler, M.R.C.V.S.

In reference to the late Mr. R. C. Tayler, of Colchester, who, as recorded by us last week, died after being thrown from a skidding motor-car, the *East Anglican Daily Times* observes that Mr. Tayler was a popular figure over a wide area around Colchester, especially amongst farmers and others having business at the Colchester and other cattle markets in the vicinity, he being the local inspector under the Diseases of Animals Act, and also well known by reason of his profession. He was born on November 24th, 1868, the son of the late Mr. Rowland Tayler, himself an M.R.C.V.S., and whom, after undergoing his training at the Veterinary College, London, he ultimately succeeded in business.

Mr. Tayler was a familiar figure in the hunting field, a sport of which he was passionately fond, and when only five years old commenced to follow the Essex and Suffolk on his Shetland pony—a pack which he continued to support throughout his long association with the Essex borough. He had also hunted with the East Essex, Essex Union, the Blackmore Vale, as well as the Suffolk Staghounds. During his career he had owned and ridden many horses, and formerly took part in many steeplechases and point-to-point races, in which he was a frequent victor.

Mr. Tayler leaves one son, Mr. R. C. O. Tayler.

Many old hunting friends, farmers, professional colleagues and personal friends over a large area attended at St. Nicholas' Church, Colchester, on August 26th, to pay their last tribute.

The following members of the veterinary profession were present: Mr. E. H. Gatfield, Mr. R. Crawford, Major F. Hogg, Mr. J. E. Miller, Mr. C. T. Murphy and Mr. A. J. Horner.

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WHITE ARSENIC IMPORT DUTY EXEMPTION

By the Import Duties (Exemptions) (No. 3) Order, 1932 (Statutory Rules and Orders No. 669), recently issued, white arsenic is added to the schedule of articles exempt from duty chargeable under the Import Duties Act.

Apart from its employment in veterinary therapeutics, white arsenic is largely used in the manufacture of sheep dips and insecticides, in which there is an important export trade. Consumption in this country is about 3,000 tons per annum, and requirements are mainly met by imports. Supplies from Empire countries have declined so as to be almost negligible, and the home production has also declined, partly because of the restriction of work in the English tin mines and partly because of the exhaustion of ores containing arsenopyrite, from which the arsenic is derived.

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PERSONAL

Birth.—On August 26th, at 63, Moat Drive, Harrow, to Dorothy (*née* May) and Arthur B. Orr, a daughter (Joan Elizabeth).

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ARMY VETERINARY SERVICE

London Gazette—War Office—Regular Army

August 26th.—Major E. G. Turner, D.S.O., is restd. to the estabt. (August 12th).

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HORSE TRAFFIC IN LONDON

An Unauthorised Statement

The following correspondence appeared in a recent issue of *The Times*:—

To the Editor of "The Times."

Sir,—At the urgent request of many of my constituents I communicated with the Minister of Transport concerning statements in the Press as to proposals for restricting horse traffic in London, and yesterday I received a reply, a copy of which I send herewith. Those who view traffic problems solely through the eyes of the motorist seem strangely ignorant as to the number of Londoners whose livelihood is threatened by proposals to banish the horse from the streets.

Anyone looking at the City traffic congestion with unprejudiced eyes can see that the major cause of the trouble is the swarm of empty omnibuses which throngs the streets between the rush hours. Unless and until the City authorities are prepared to tackle the problem of the empty omnibus there will be no improvement in traffic conditions in the City.

I am your obedient servant,
E. Strauss.

68, Borough High Street, S.E.1.
August 17th.

Ministry of Transport,
6, Whitehall Gardens,
August 15th.

Dear Strauss,—I refer to your letter of the 8th of August.

I am informed that the statement which appeared in an evening newspaper as to the prohibition of horse-drawn vehicles was quite unauthorised by the Commissioner of Police, who has no knowledge as to how it originated.

I can assure you that such a step having such far-reaching consequences would not be taken without the fullest consideration, and at the present time no suggestion of the kind is even before me.

Yours sincerely,
P. J. Pybus.

Edward Strauss, Esq., J.P., M.P.,
68, Borough High Street, S.E.1.

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ANTHELMINTIC MEDICATION

"Conditions recently have favoured the sale of proprietary remedies and nostrums, particularly for the treatment of household pets," says the *North American Veterinarian*." "One of the most profitable items offered by a national advertiser is a compound for the treatment of worms in dogs. Even though this particular preparation is probably responsible for more harm than good when indiscriminately administered to dogs that are thought by their owners to be infested with worm parasites, its virtues are proclaimed nationally, by the producers.

"Veterinary practitioners should not hesitate to advise their clients that it is impossible to cause expulsion of intestinal worm parasites in dogs without causing more or less disturbance to the host and in spite of the most careful treatment an occasional fatality will result, and obviously, indiscriminate use of active vermicidal agents is provocative of more harm than good in the hands of laymen. Such practice is therefore not to be recommended as an economical procedure for animal owners."

Correspondence

Letters to the Editor should reach the Office not later than by the first post on Tuesday morning for insertion in following Saturday's issue.

All correspondence must bear the name and address of the contributor for publication.

The Editor does not hold himself responsible for the opinions of his correspondents.

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THE VALUE OF THE PART-TIME INSPECTOR

To the Editor of the Veterinary Record.

Sir,—Being somewhat pre-occupied with the arrangements of our own Congress I was unable to be present at the Congress of the Royal Sanitary Institute at Brighton in July, which I regret, as a very interesting discussion occurred in which I should have been happy to have taken part.

I was particularly interested in the naïve assertion of your recorder that one gentleman "amazed the meeting by trying to demonstrate that part-time veterinary inspectors were to be preferred to whole-time inspectors of dairy cows." Personally I am astonished at the amazement and consider that it is quite obvious that a staff of part-time inspectors is in far the best position efficiently to examine herds of dairy cows.

The crux of the position has always seemed to me to be the clinical examination of the udders of dairy stock and a primary question to be, what relationship should the examination bear to the content of the udder? At our own Congress I stated that it was my practice, in acting under either the Tuberculosis Order or the Milk and Dairies Order, to arrange for the cows to be milked and for the milkers to let me know when they considered they had come to the "strippings" and I would examine the udder, leaving the strippings if required for the milk sample. I said I did not see how the udder could be efficiently examined except in some such way. Subsequently I was approached by a whole-time inspector who informed me that I had misunderstood the situation—that what I suggested was all very well for the Tuberculosis and the Milk and Dairies Orders work, but did not apply to quarterly inspections. I stated that I had not misunderstood the matter, that what I had advocated was a principle of examination and that it should be applied to quarterly inspections.

I was then told that it was impossible to do so; that no local authority would act in that way. I replied that it was the most efficient way of conducting the examination and could be done with a part-time staff. I was rewarded with the reply that "it was inefficient." Apparently it was the inefficiency of impracticability, but the inefficiency and impracticability only exist in

whole-time service. To put a whole-time man in charge of a county and expect him to make a quarterly examination of dairy cows and especially a thorough examination of the udder is, to my mind, as a general proposition, simply farcical: it is a physical impossibility.

A whole-time staff will always be handicapped by the paucity of its numbers.

A whole-time service has its advantages in large towns, and local authorities may desire an administrative head, but to regard tuberculosis as the preserve, almost the prerogative, of the whole-time man is absurd.

The problem of the elimination of tuberculosis is far too serious a question for that. It requires the persistent united effort of the Ministries of Health and Agriculture, whole-time men, part-time men, practitioners and many others.

Yours faithfully,
Hugh P. Hogben.

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BOVINE OBSTETRICS

To the Editor of the Veterinary Record.

Sir,—With reference to the use of pituitrin and to the epidural method of injection, I think it will interest country practitioners to know that, according to Professor Benesch, of Vienna, pituitrin acts during the first few days after parturition most strongly and with a more prolonged effect if administered epidurally, than if given subcutaneously or intravenously.

After the fifth day *post-partum* Benesch recommends the intravenous route.

In common obstetric practice, therefore, epidural injections of pituitrin are indicated in cases of retained membranes—combined with pessary treatment—and in cases of prolapsed uterus.

I consider that in the latter case both a local anæsthetic and pituitrin injections might be useful, the epidural anæsthesia being induced with a minimal dose and the pituitrin injected after reduction of the prolapse has been effected. I have seen no literature on this exact procedure, but it is only a short step beyond Benesch's actual utterances, as he insists on the value of each of these methods separately.

Perhaps our enterprising bovine-obstetrical practitioners will try out the above double method.

Yours faithfully,
J. Tweedale Edwards.

Addlestone.

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ANONYMOUS PUBLICATION OF REVIEWS

To the Editor of the Veterinary Record.

Sir,—As an old reviewer who has never published a critique without an appended signature, initial or recognisable *nom-de-plume*, and also as one who has noted with pleasure and appreciation the marked improvement in the standard of English veterinary journalism in recent years, I read with profound regret the footnote in to-days' issue of the *Veterinary Record* stating that in future all reviews of books will be published anonymously.

When discussing this subject some three years ago, one of our leading publishers remarked in my presence: "the publication of anonymous reviews is a bad practice which lends itself to abuse and I would never permit it in any journal over which I have any control."

Faithfully yours,
David Eric Wilkinson.

Oakwood,
Chigwell, Essex.
August 20th, 1932.

The Editor acknowledges the receipt of the following:—

Reports of meetings of the following Divisions, N.V.M.A., from their respective Hon. Secretaries: Southern Counties, Derbyshire, North of England.

Communications from: Mr. D. J. Anthony (Brierley Hill), Mr. L. E. W. Bevan (East Sheen), Dr. H. H. Curson (Onderstepoort), Mr. H. J. Loveless (Clacton), Mr. R. S. Roberts (Wye, Kent), Major D. S. Rabagliati (Wakefield), and Mr. Tom Walker (Blackpool).

Diseases of Animals Acts, 1894 to 1927

SUMMARY OF RETURNS

Period.	Anthrax.		Foot-and-Mouth Disease.		Parasitic Mange.		Sheep Scab.	Swine Fever.	
	Outbreaks confirmed.	Animals attacked	Outbreaks confirmed.	Animals slaughtered as diseased or exposed to infection.	Outbreaks reported by the Local Authorities.	Animals attacked	Outbreaks confirmed.	Outbreaks confirmed.	Swine slaughtered.
Period 1st to 15th August, 1932	No. 9	No. 11	No. 3	No. 204	No. 3	No. 3	No. 10	No. 39	No. 31
Corresponding period in 1931	6	10	5	241	2	2	4	33	5
1930	10	10	—	—	4	10	14	74	36
1929	12	42	—	—	8	10	14	102	53
Total 1st January to 15th August, 1932	246	303	6	431	91	151	146	1,180	585
Corresponding period in 1931	319	355	79	8,478	104	171	195	1,249	511
1930	249	272	—	—	165	251	272	1,634	674
1929	291	369	23	1,895	156	321	353	1,416	838